Exhibit 1

DECLARATION OF JOHN D. HOWARD, M.D.

I, Dr. John D. Howard, declare under penalty of perjury the following to be true to the best of my information and belief:

1. I am a forensic pathologist and the Chief Medical Examiner for Pierce County, Washington.

2. On May 3, 1994, I performed an autopsy of Rachel Gray. At that time I worked as a forensic pathologist with the office of the medical examiner for Pima County, Arizona. I testified in this capacity at the defendant, Barry Jones's ("Petitioner") trial. [RT 4/15/95, pp. 101-55]

3. When I testify, I answer only the questions that are asked. If a question is not asked, I cannot answer it. If Petitioner's trial counsel had asked me whether the injury to Rachel Gray's abdomen that caused her death could have happened more than 24 hours before her death, I would have answered the question in the affirmative.

4. It is my medical opinion that Rachel Gray's death was caused by a small bowel laceration due to blunt abdominal trauma. The placement of the laceration was such that it caused a rupture of the duodenum (small bowel) where it attaches to the back side of the abdominal wall. Blunt impact to the abdomen

caused contusion or bruising and tearing of the tissue caused spillage of fluid and bacteria which in turn caused inflammation and infection called peritonitis. Because of the position of this type of laceration, delayed presentment of symptoms can occur.

5. Based upon the autopsy results, it is my opinion that Rachel Gray died some time after midnight and hours before she was found at 0600 on May 2, 1994.

6. Post-mortem vitreous chemistries for a sample obtained at the autopsy showed a pattern of dehydration. There is evidence of pre-renal azotemia with hypernatremia.

7. Rachel Gray's post-mortem weight is consistent with these abnormal chemistries and these findings are consistent with an injury that could have been present greater than 24 to 48 hours and perhaps longer.

8. At trial, I was asked by the prosecution whether, based upon "the degree of disease process" I saw during the autopsy, if it would be "consistent with [Rachel Gray] having received a blow that caused the laceration sometime between the hours of 2 and 5:30 or 6 on the afternoon of May 1st." I replied, "May 1st – she had died on – May 2nd – any time on the 24 hours prior to that would be consistent, so that time frame would be possible." [RT 4/15/95, pp. 148-49]

9. This time frame is consistent with my testimony at Petitioner's sentencing hearing, when I testified that the process of inflammation and infection caused by Rachel Gray's lacerated bowel could potentially last more than a day. [RT 6/13/95, p. 36]

10. My opinion as to when the blow to Rachel Gray's abdomen occurred could have been expanded upon had I known that Rachel Gray appeared sick on Friday, April 29, 1994 before her death. A report that Rachel Gray looked ill is consistent with the abdominal injury being inflicted prior to that time.

11. Also, as I testified, Rachel Gray had some bruises on her body which were consistent with having occurred four to six days prior to her death. Had Petitioner's counsel asked me, I would have testified that those older bruises could have been consistent with the blunt force trauma to Rachel Gray's abdomen.

12. At Petitioner's trial, I also testified that Rachel Gray was underweight at only twenty-eight pounds and forty inches tall. [RT 4/14/95, p. 105] Information regarding Rachel Gray's pattern of slowed growth and history of familial abuse is consistent with a diagnosis of a chronically abused child.

13. The injuries to Rachel Gray's vaginal area showed characteristics consistent with hours to perhaps days elapsing between the time of her abdominal injury and her vaginal injury.

14. The laceration on Rachel's scalp could have resulted from a fall against a hard surface. The laceration did not contribute to her death.

15. If Petitioner's trial counsel questioned me on dating the blow that caused Rachel Gray's death, I would not have limited the possible time period to only within the time frame given by the prosecution.

16. At the request of counsel for Petitioner, I reviewed the autopsy records including tissue slides and my trial testimony from Petitioner's case. I also met with Dr. Janice Ophoven, a forensic pathologist who is Petitioner's forensic expert.

17. The observations, impressions and professional opinions set forth in the Report are true and correct.

I declare under the penalty for perjury under the laws of the United States and the State of Washington, that the foregoing is true and correct.

Signed this 15th day of DECEMBER, 2004.

John D. Howard, M.D.

Exhibit 2

DATE: JANUARY 20, 1995
DD: DAVID DARBY
LB: LESLIE BOWMAN
AM: ARLEEN MOORE
SS: DOCTOR STEVEN SEIFERT

LB: January 20th. We're at the offices of uh, County Attorney's. It's about 10:45 a.m. Uh, present are myself, Leslie Bowman, representing Barry Jones. Uh, David Darby for Angela Gray. Arleen Moore, and Joanna from the County Attorney's office. And we are interviewing Doctor Seifert here today. Uh Doctor Seifert, could you spell your name for the transcriber, please.

SS: Steven, with a v -- S-E-I-F-E-R-T.

LB: Thank you. Uh, Doctor Seifert, I have in front of me a report. It's five pages, uh, it looks like there is some narrative on the first page. There's a page uh, of like charts, or graphs.

SS: I've got it somewhere. We, we probably don't have it in right.

LB: It's somewhere in there, right? There's a, a page that's called valuables inventory. Uh, there's another page called emergency room record, with uh, uh a diagram on the lower portion. And there's another page called, patient expiration record. Are these the only pages that uh, that you had anything to do with in this case?

SS: Yes.

LB: Okay. And is this everything. Are we missing anything?

SS: I don't believe so.

LB: Okay. You've had a chance to review these?

SS: Yes, I have.

LB: Is there anything in these, as, as you've looked back on them now, that you think is inaccurate?

SS: No, I wouldn't say inaccurate. They're not complete, necessarily.

LB: In other words, there are things of significance that are not in these reports?

SS: Yes.

LB: Okay. Um, is there anything in them that should not be in them?

SS: Not that I can tell.

LB: Okay. And as we go along through the report uh, would you just please indicate to us the additional information that you think is relevant?

SS: Certainly.

LB: Okay. Thank you. Are these written -- is this uh, this narrative page, was that written in your hand writing?

SS: Yes, it is.

LB: Okay. So, so....

SS: Most, most of it.

LB: .....you can read it then.

SS: The physician portion of it is. The.....

LB: Okay.

SS: ....the very top quarter of the page is uh,written, was written by the nurse at triage.

LB: Okay.

AM: Lois Atkins.

SS: And uh, a portion on the right lower hand corner, was written by someone else.

LB: Okay.

SS: Probably, also by Lois.

LB: Um, all right. Could we just start -- I've, I've read through this, but I, I'm sure I didn't fully understand all of it. Can you just take us through what's written on, on this page -- and again, adding in information that you think is, is missing?

SS: Okay. Uh, at the very top, it indicates the patient uh, was brought to the emergency department at 0616 in the morning, on May 2, 1994.

LB: Okay.

SS: Uh, the mode of arrival was by private vehicle.

LB: Okay.

SS: Uh, the mother had brought the child in -- it say's," mother here."

LB: Uh-huh.

SS: And that TPD was, was notified.

LB: Okay.

SS: Uh, the child was uh, was a four year old, with a birthday of 4/7/90.

LB: Okay.

SS: Uh, arrival classification, was listed as six, which was DOA. And uh, no vital signs were obtainable .....on arrival.

LB: Okay. And this sort of little picture -- almost looks like a person -- with a circle around it. What does that indicate?

SS: Uh, where are we?

LB: It's right under where it say's physician notify.

SS: Physician....

DD: It's up at the top.

LB: On the top left.

SS: That's a zero with a circle indicating, "none, no vital signs could be obtained."

LB: Oh, okay.

SS: That's....

LB: Then uh, on the right hand side, in, in the corner there?

SS: Uh, I believe....

LB: Where it says, last tetanus.

SS: I believe this is M. Munoz. It's probably the TPD officer.

LB: Okay.

SS: And then TPD officer's badge number. That's, that would be some physician phone call-- notifying.

LB: Okay.

SS: Uh, that's -- that portion is not in my hand writing.

LB: Oh, okay. What would normally be indicated in this box that say's LPM?

SS: Oh, that's uh, last menstrual period, for adult patients -- adult female patients.

LB: Okay.

SS: Um, so that area which normally would be used for other things, was just used for some other charting that needed to be done.

LB: Okay. And it's not clear to you what -- like, it's not clear to me, so....

SS: It's not, I don't know who M. Munoz is, but, I would make the assumption that that indicates that the police officer was notified. The OME and, uh was called at 0820. It's another...

LB: Oh, I see. Okay. Then it say's, "found unconscious, unresponsive." Is that information that was taken from the mother?

SS: I believe so. Yes.

LB: Okay. And then, could you just read through uh, for us, that first paragraph under, History and Physical?

SS: Sure. All right. This is in my hand writing.

LB: Okay.

SS: S/ stands for subjective, meaning history.

LB: Uh-huh.

SS: Uh, "patient brought in by mother, found" uh -- that's my abbreviation for unconscious and unresponsive....

LB: Okay.

SS: ....this a.m. Reportedly fell out a van yesterday and sustained bruises and scalp laceration. Mother says child and boyfriend both gave same count. Boyfriend reportedly took child to fire station, and uh, told, injuries not, did not require medical attention."

LB: Okay.

SS: That was from what the mother told me, after I had concluded examining the child.

LB: Okay. Um, and then, could you do the same for us for the next paragraph, please?

SS: O/stands for objective.

LB: Okay.

SS: That if someone objects the examination. Uh, "patient, cool, rigor mortis evident, positive dependant lividity. Pupils 4 to 5 and non reactive. No spontaneous respiration or cardiac activity. Very pale, multiple bruising seen over forehead, face injury, chest injury, abdomen and lower extremities. With laceration in left uh, fifth crown of skull, and abrasions of injury chest, abdomen, legs, with hemorrhage in drums. Fundi (ph) no hemorrhage seen, small blood noted in underwear, ecchymosis and swelling of left third finger noted." And then, I continued uh, unto unto a second page, uh that....

AM: It's the one with the drawing.

SS: ....it's the one that has Emergency Room Record, with the drawing on the lower page.

LB: Thank's. Okay.

SS: I did some, some drawing over on the right hand side of the first page -- of the face. And uh, did, did some body markings on that, on that second page that I continued over on to.

LB: Okay.

DD: First page with the face?

LB: On the right, in that box. Like a third of the way down.

SS: The face sheet.....here.

DD: Oh, okay. I gotcha! All right, I'm with you. All right. Oh, I guess that's what that is!

LB: Uh, the drawing with the face, whether you're -- I see you're indicating the laceration on the head?

SS: Yes.

LB: Uh, and then, is this the bruising to the forehead?

SS: Yes.

LB: And then what are you showing around the eyes?

SS: Uh, ecchymosis, uh....

LB: Which is....

DD: Which is what?

SS: Bruising.

LB: Bruising?

SS: It's a reddish, blue discoloration of the skin, that's resulted from breakage of blood vessels, in, in the blood.

LB: Okay. And is that necessarily bruising, or.....?

SS: It's, it doesn't necessarily have to result from direct trauma to that area.

LB: Right.

SS: But it can dissect from other, from other places.

LB: But it ends up looking like a bruise?

SS: Yes.

LB: So, in other words, um, in the area of the eyes, it's possible that the bruising or, or discoloration, was not from a blow? That it was from blood leaking in?

SS: It's possible that's it's not from a direct blow to that area. Especially around the eyes. For example, bruising to the forehead, may result in blood tracking down into the tissues

around the eyes, and getting distributed because of the way the tissue claims uh, uh, formed.

LB: Okay. And, then, now, this bruising to the forehead, is there any explanation to that besides, a blow?

SS: Uh, in this, in this case, it, it appeared to be a direct blow.

LB: Okay. And what, what makes it appear like that?

SS: Uh, well if there are abrasions, or swelling of the tissue in addition to the discoloration, that would indicate a direct blunt force, uh, delivered to that area.

LB: Okay. And, and you did observe those things?

SS: Yes, I did.

LB: Okay. Um, can you speculate at all whether that bruise would be like, from an object, or from the hand, or -- it seems like an odd shape to me, because it went like sort of around. Uh....

AM: Look on the_____

LB: No, that's okay, I'll let David do that. Um, I'm just curious if, if you came to any conclusion as to how you though that could have occurred?

SS: Uh, it would help if I could see the photos we had taken at the time.

AM: Here, pass these.

SS: I can't see any, any particular markings that would tell me how that was formed. Uh, except that it appears to be a blunt force.

LB: Okay. And you're looking at photo number 55?

SS: 55.

LB: Okay.

SS: And, 56....59, 60, also show the same area,

LB: Okay. So, when you say, "a blunt force," it could of been uh, like a hand, a foot, an object. Something, but something without sharp edges.....thick?

LB: All right. Can you just tell us uh, what your exam involved? In other words, what did you actually do to the body?

SS: Well, my initial consideration was to determine whether or not, uh, the patient was able to resuscitate. Uh, you know, we very quickly determined that there was no spontaneous heart activity -- breathing, uh, and I had to determine whether I, whether I considered uh, whether I was going to consider trying to resuscitate the child. The presence of rigor mortis, and dependant lividity -- which is just pooling of, of blood that is no longer being circulated -- uh, indicated that the uh, child had been dead for to long a period to attempt a resuscitation. Uh, once I made that determination, I did a cursory (ph) examination simply to note the major areas of injury. Uh, and uh, to document those. There were obviously many, many more minor injuries that I noted, but did not uh, necessarily chart. I knew this was going to be a OME case, and that this would be extensively uh, a meticulous detailed....

LB: Okay.

SS: .....by the coroner.

LB: Okay. So when you say an examination, uh, are you using any instruments, or tools? Or are you just kind of looking?

SS: Uh, well, I, I use my stethoscope to listen for a heart beat...

LB: Right.

SS: .....and breathing, but other wise, it just involved uh, looking. I also used the ophthalmoscope to look in the uh, to look in the child'eyes and find this.

LB: Okay. And, and what is that for?

SS: Well, in some cases when children, for example, are, are repeatedly shaken -- or shaken vigorously, hemorrhages can form. Also, subarachnoid hemorrhages is often associated with hemorrhage -- certain types of hemorrhage in the back of the eye. And the best time to see those uh, is uh, is often immediately after uh, death -- uh, or soon after death, as soon as possible. So, I, I wanted to do that particular exam.

LB: Okay. And....

SS: That was the only instrument that I used.

LB: Okay. And you noted in your report that there was not.....

SS: I didn't see....

LB: .....that hemorrhage?

SS: .... I didn't see any hemorrhages.....

LB: Okay.

SS: ....on the back of the eye.

LB: Okay. Does that indicate the child was not shaken? Or it's just.....

SS: It was just not present.

LB: Okay. Uh, when you said she had obviously um, been dead to long to resuscitate....can you tell how long she had been dead?

SS: We obtained a rectal temperature which was recorded at 6:25 as 92.8 degrees Fahrenheit. Um, the rate at which a body cools depending upon the number of factors, including the ambient Temora. Uh, but you can say, you can say that in general body cools uh, uh, somewhat between 1 and 3 degrees Fahrenheit per hour. Uh, so my estimation was uh, the child had been dead on the bases of temperature at least two to three hours. Uh, also, there is a certain length of time required for rigor mortis to set in and for lividity to set in. And, uh, these were also consistent with my estimation of the time -- that it was somewhere two to three hours.

LB: Okay.

SS: We have about uh, 15 to 20 minutes to resuscitate someone....

LB: Uh-huh.

SS: ....uh, after, after their heart stops, and they stop breathing. So, the length of time was clearly longer than uh, it would be possible for resuscitation.

LB: Okay. Uh, now when you're, when you were examining the body, you then manipulating it in terms of like, turning and looking, and, and that sort of thing?

SS: Yes, I, I rolled the body over to look at the posterior side.

LB: Okay.

SS: I looked uh, at the genitalia, but did minimum manipulation.

LB: Okay. And does that uh, in any way affect the accuracy of the exam that the medical examiner will do later?

SS: I don't believe so. Uh, I, you know, didn't handle the body in a way that would produce abrasions, of course or....

LB: Right.

SS: ....or, and bruising would no longer be formed, because there is no longer circulation of blood.

LB: Okay.

SS: Uh...

LB: But body fluids.....

SS: I left....

LB: ....would be displaced, or no?

SS: ....uh, I would not think so, and I left the body in the same position as, as when I began, uh, essentially when she was laying on her back....

LB: Okay.

SS: ....on the cot.

LB: Um, now, you've had an opportunity to look at that uh, laceration to the head?

SS: Yes, I did.

LB: And what was your opinion about that?

SS: There was a uh, uh, approximately, 1 ½ to 2 centimeter laceration of the left side uh, posterior and superior aspect of the scalp. Uh, there was some matted blood around it. Uh, it appeared to be uh, made by a blunt force of some kind.

LB: Okay. Uh, did you notice if there was any like rocks, or dirt, or, you know, anything?

SS: There was, as I said, there was a lot a matted blood around the laceration, and I didn't recall whether I noted any other foreign material.

LB: Okay.

SS: I didn't clean it off, so it was left in the state that it....

LB: And no one else did? A nurse or....

SS: No.

LB: Nobody had done it?

SS: No.

LB: Okay.

AM: It wasn't cleaned out prior to going to OME?

SS: Not to my knowledge. I mean, it's not something that we would do, because uh, it's just not something that we would do.

LB: Right. Okay.

SS: Someone were alive, we were going to prepare laceration, that would be standard procedure. But....

LB: Right.

SS: ....not in this case.

LB: Okay. Did you come to any kind of conclusion, or, or, form an opinion about any of the other bruises, or injuries to her body?

SS: (No audible response)

LB: In terms of.....

SS: In terms of.....

LB: ....of uh, how they might have come to be, or, uh, the seriousness -- that sort of thing?

SS: The majority of the injuries appeared to be to the anterior portion of the body. There were a number of marks, abrasions, and, and the like, that I noticed posteriorly as well. But the majority appeared to be interior and, with the exception of the one laceration on the scalp. Uh, she appeared to have sustained significant blunt trauma to the head, the chest, the belly, and the extremities. I, uh assumed that either the head injury, the chest, or the belly, resulted in some fatal injury. But I, from my, from my external examination, I could not say uh, what that was.

LB: Okay. And you said that you noted major areas of injury although there were also minor bruises and abrasions?

SS: Yes.

LB: In your opinion, what were the major areas of injury?

SS: The major areas of injury were to the head. Both, the forehead, uh, and facial -- the, the forehead contusions....

LB: Uh-huh.

SS: .....and the scalp laceration. On the injury to her chest, there was, uh, there was bruising. And...if I may?

LB: Sure.

SS: It shows pictures of -- and those, those are the bruises extend down over the upper abdomen.

LB: Okay.

SS: And you can, you can have significant internal injury to the organs in this area that are capable of causing death.

LB: Now, we're looking at photos 31, and 32.

SS: And, 33 and 34.

LB: Okay. And it's, it's all kind of reddish and, and looks scraped and bruised, and that sort of thing?

SS: Yes.

LB: Is it possible that any of this appeared after death?

SS: It takes uh, some period of time for bruise to form. Uh, if you're struck with a blunt object, blood vessels are broken. Uh, fluid from the tissues, and blood leaking to that area, form a, form a contusion and ecchymosis. If you die immediately, uh, after being struck, you no longer have circulation. And the amount of bruising it forms, is minimal. Uh, you can detect it uh, microscopically, but, for this kind of bruising to become apparent requires at least some period of time after the injury. Uh, the heart beating, and what not to form. Once you, once you die, the progression of these areas, is going to be minimal. If there is blood in the tissue, it may continue to dissect from gravity and spread uh, to some, to some extent. But that's going to be minimal, because there's no longer additional material coming into the wound. Uh, one other complicating factor is that of dependent lividity. After you die and your blood stops circulating, it tends to cool in the most dependent portions of the body. Uh, it appeared that most of that occurred in the back, so that the patient was uh, probably on her back when, when she died. Uh, this causes a general modeling picture, which can be sometimes difficult to distinguish from bruising. But, as, as the uh, as the modeling was on the back and these bruises are clearly on the front, and I would have to say that these appeared pretty much as they did at the time of the death.

LB: Okay. And uh, can you give us an estimate of how long it takes for a bruise to form, you know, in a person this age, and size -- or, I, you know. I don't know what factors affect it?

SS: Well, the factors affected is how much uh, uh much injury you have to the tissue, and how much blood comes -- how much and how fast the blood dissects into the tissues. That can be -- a bruise can up within a matter of seconds for a sufficient force. Or a matter of hours for something that is uh, lesser, that causes lesser local injury. So.....

LB: So, we can't really say how long it took for these bruises to appear?

SS: No, I can't.

LB: Okay. Did you come to any kind of conclusion about the injury to the genitalia?

SS: We noted some blood uh, in the underwear. And, uh, I did a very cursory examination of the uh, of the external genitalia. I noted some blood around the introitus, the opening to the vagina, and what appeared to be a little bit of bruising of the labia majora. I did not uh, uh, conduct a general examination beyond that point. Uh, I was concerned that manipulating the genitals might in fact alter the, the autopsy findings to some extent that would create additional injury that was done to forcefully. Or loss of evidence if material was allowed to leak out. And so I just looked at the area, and left it alone other wise.

LB: Okay. And the amount of blood that was in the underwear -- I know it's hard to quantify, but....

SS: Small, it was a small amount.

LB: Like, a dot, or a drop of blood, or a couple of drops, or....

SS: Something like that.

LB: Okay. And had that um, gone through to the pajamas? I know she came in some kind of sleeper.

SS: I don't recall. I think that we got the pajamas off her very rapidly, and I don't recall looking at them again after that.

LB: Okay. Can you tell me what, what these charts and graphs indicate?

SS: We hook the child up to a cardiographic monitor. Uh, the fact that I couldn't hear a heart beat, was -- in, in a small child, of course, is pretty good evidence the heart isn't beating. But, uh, I wanted to determine whether there was any sign of electrical activity uh, still present, which would indicate the possibility of resuscitation, and give us an idea that perhaps she hadn't died in the remote past. Uh, I did this routinely, because I didn't have any doubt that she had been dead to long. Uh, the monitor lead here, shows a compleatly flat line based on electro activity. There is none from the, from the heart.

LB: Okay.

SS: So we simply ran off the strip to document the....

LB: Okay.

SS: Across the top, I should indicate it says, "normal blood pressure -- equipment, malfunction," that's just because they couldn't detect the blood pressure.

LB: Okay.

SS: Or the blood pressure monitor wasn't hooked up. But, in any event, there was nothing to feel.

LB: Okay. Did you have any opportunity to speak with the mother?

SS: Yes, I did.

LB: And, uh, you explained that this first paragraph was information from her. Is there anything that she told you that is not noted in that first paragraph -- that you can recall?

SS: Uh, probably would be -- let me think back. After I examined the child, and determined that there was no possibly of resuscitation, uh, I had the mother uh, placed in my office, and that way I could talk with her. I informed her that uh, that the child was, was dead. And as I indicated, she said that she had uh, spoken with the child the, the evening before. I recall her telling me that she'd come home somewhat late. I don't know whether that means late for her, or late for the child -- but that uh, it was dark, and that she was not able to uh, fully observe the extent of the child's injuries at that time. But that she had been told that the child had been injured falling out of the van, and that the child had indicated to her that that was how the injuries were sustained.

LB: And when you're talking about the injuries, you mean, like the forehead and the, the laceration?

SS: I would assume, I would, I would assume that those were the injuries.....

LB: Okay.

SS: ....that she was referring to. I.....

LB: Okay.

SS: ....didn't get that in, in detail.

LB: And is that consistent? Were the injuries consistent with a fall like that?

SS: I would say so, depending upon, you know, the height....

LB: Right.

SS: ....and the material fallen on to.

LB: Right.

SS: But yes, if, if someone were to fall out of a van several feet, if it was -- I don't know whether the van was moving or stopped. The mother was not a direct witness, so I didn't go into that.

LB: Okay.

SS: But, yes, these would be consistent with that kind of an injury.

LB: Okay. Uh, and when, when she told you that the child was taken to the fire station and told that the injuries didn't require medical attention, uh, did that seem visible?

SS: Uh, no. Uh, I shouldn't -- some of the injuries we're talking about are, are consistent with that kind of a story.

LB: Right.

SS: I'm not sure that the genital injury.....

LB: Right.

SS: ....necessarily be consistent with that. Uh, there are some marks on the buttocks that I don't think are related. There are some, some....

LB: Right.

SS: .....some of the injuries, perhaps are not, but the majority of the interior findings and the scalp lacerations would be consistent with that.

LB: Okay.

SS: I just want to clarify.

LB: Okay.

SS: No, I didn't think that it was possible that, that the child who had this much trauma and a significant and obviously repair -- a suture repairable laceration to the scalp, would be looked at by uh, by a trained person and uh, not told to present for, for evaluation and repair at the time.

LB: Okay. Um...and when, when you were finished with your examination and speaking to the mother, what happened with uh, the child's body.....if you know?

SS: Uh, I believe it was simply prepared to be sent to the uh, to the medical examiners office, and uh.....

LB: What does that involve?

SS: I, I -- you would have to ask the nurse.

LB: Okay.

SS: At that point, that's their task -- to simply prepare the body for transport.

LB: Okay. Did you ever have an opportunity to speak with any of the police officers?

SS: I did speak with one uniformed police officer, who uh, came to the scene. It may very well be officer Munoz. I don't remember....

LB: Okay.

SS: Uh, I don't remember his name.

LB: Do you remember uh, what it is that you spoke to him about?

SS: Uh, I believe he asked me what, what I saw in the examination. And I, I told him about the bruising and uh, and the laceration to the scalp. The fact that the child was, had been to long a period to resuscitate. Uh, I don't have a recollection as to whether I spoke with him after I spoke to the mother -- regarding the mother's statements to me.

LB: Okay. And uh, did you at any time come to uh, the conclusion that this child was a victim of child abuse?

SS: There were indications. The, the general trauma. Uh, that there may have been abuse. Uh, there was -- on the face of it, it was, it was also evident that there was neglect. Uh, I had no way of knowing -- have no way of knowing, as to whether or not, the injuries were sustained as stated, uh obviously they were not in -- and this is the whole, the whole presentation as an example of an evidence for direct abuse. But I, uh, I would have no way of verifying.

LB: In other words, just from the physical, just from the body? It's not 100% clear? It's possible?

SS: It's possible. The uh, marks on the buttocks could indicate that there had been uh, discipline -- physical discipline delivered in that area. Uh, as I indicated, the, the vaginal trauma was concerning for that -- for sexual and physical abuse there. Uh, there appeared to be some bruises that were older than, than the majority of the injuries. Uh, I'd, I'd have to say, 90, 95% of the injuries appeared to have all been sustained in that, in that, whatever, one occurrence. There were a few bruises that appeared to be uh, at least a day or two older. Uh, this was difficult because some of them were located posteriorly, where there was a lot of modeling. And it's not easy to tell. I, I assumed that the uh, medical examiner would be able to give you a better determination as to age. Kids get banged up uh, from routine play, so not all, not all bruises are necessarily indicative of abuse, so.

LB: Okay. Well, I think that's all I've got. Thank you. I'll turn you over to Mr. Darby.

DD: Yes, doctor. This are a couple of follow-up questions. You talked about the injury to the genitalia, the vagina. Were you able to tell uh, how old that particular injury was?

SS: No.

DD: All right. Now, you indicated that the majority of the injuries uh, that you observed were on the child's anterior -- I guess that's the front, right?

SS: Yes.

DD: Okay.

SS: Anterior is front. Posterior is back.

DD: Okay. I just want to make sure we have our terminology straight here. Uh, now you indicated that there was -- there were injuries on the front. The injuries that you observed on the child -- the injuries that you observed on the front of the child. Well, I don't know. You stated that -- I guess, the, the lividity and the settling of the blood and the body fluids, appeared to be settling as if the child had died on her back?

SS: Yes.

DD: Okay. Now, let me ask you a question -- I'm going to pose it a little hypothetical to you. If the child had, had died on her uh, on her front, or face down, the blood and the uh, liquids -- vital fluids, would have settled towards her stomach, or towards -- towards gravity, right?

SS: Yes.

DD: Now, if she were to die, and as, and, and on her stomach, and then, a short time thereafter -- say thirty minutes, or forty five minutes, or an hour later, be rolled over on to her back, would that make a difference? Would, would everything turn around and settle back? Or do they tend to thicken or.....

SS: Well, there is coagulation uh, that occurs. Uh, I, the coroner would be in a better position to answer that kind of a question.

DD: All right. If I were to tell that, that the baby was found on her stomach and picked up and laid in her bed, by her sister, early that morning -- would that change any of your conclusions as to what you, what you observed? And how these injuries are, are what you observed on the body came about?

SS: I don't think so.

DD: Okay.

SS: The, the injuries that I observed anteriorly, were, were almost assuredly the result of bruising and not, not lividity.

DD: All right. And, that, that is my point. I just want to make sure that we're clear as to bruises being camouflaged, or injuries or marking, or discoloration being confused for bruising.

SS: Um, most of the interior injuries are accompanied by abrasions.

DD: Okay.

SS: Which indicate, indicate direct injury to that area.

DD: Some kind of scraping along with the contact?

SS: Yes.

DD: All right. And you indicate, I guess, I guess, your opinion essentially, or least, looking at them, they were blunt force types of injuries?

SS: Yes.

DD: Okay.

SS: If, if I can draw your attention.....

DD: Sure. Draw, draw your attention to anything that you....

SS: ....some of the pictures of the back. Uh, pictures 27 and 28. Uh, in particular you'll notice uh, the areas uh, on the back here that indicate the pooling of blood. There's less, there's less in the area that actually is compressed against the, the bed -- whatever the child is lying on. The blood doesn't -- just, just can't get into that area. But the areas immediately around that, where there is no uh, compressive force, that's where the blood is pooling. So the child remained on her back for some period of time after death, and the blood pooled in these areas. If she now -- you know, hours later, turned her over, it's not likely to changed, because the blood would have coagulated and would no longer be fluid.

DD: Okay.

SS: At what point that changes, uh, that's not my area of expertise.

DD: All right. Uh, while we're looking at, at some of these pictures -- I only see picture number 22, 23,24, which appear to be the, the child's uh, buttocks. Uh, it, it looks like there's some injuries or some kind of bruising or, something that is on there. Are you able to determine by looking at those, what types of injuries those are -- other then just something that would cause a bruise? What would cause those? And am I not right in describing that they look like -- well, they're round in nature. One of them is round and then the other one is kind'a like long.

SS: I can't state within any certainty what uh, what caused those injuries.

DD: Okay. All right. Uh, now in your experience -- uh, I, will you agree with me that head wounds bleed a lot?

SS: Um, they have a tendency to bleed more than wounds in certain other parts of the body.

DD: Okay. And you described the laceration to this child's scalp from 1 ½ to 2 centimeters in length?

SS: Yes.

DD: All right. How much would, would a wound of that type, located where that particular wound was located -- would that tend to bleed a lot?

SS: It's, it's variable, how much they bleed. There's going to be -- uh, sometimes you get, you get a blood vessel that is partially lacerated and remains open, and continues to pump out a lot of blood. And sometimes you get uh, spasms of the vessels if they're lacerated completely and they retract, and the bleeding stops fairly quickly. It's very difficult to generalize. What I would say is that the amount of blood that I saw around that laceration, was consistent with that kind of injury.

DD: Okay. Now, I guess -- you indicated that that type of wound needed stitches.

SS: If the child had come in to me alive with a laceration like that, I would have repaired it with the sutures, yes.

DD: Now, would a wound of that type heal without stitches? I mean, would it scab over -- eventually, scab over and, and heal itself?

SS: Yes. The body heals by forming scar tissue, uh, which goes into defects, and then, and then, you know, reattaches the two edges of an injury. The reason we repair injuries, is number one -- to, to clean out the area and decrease a livelihood infection. And number two, to decrease the ultimate thickness of, of any scar tissue that forms. Uh, they heal more quickly, and they heal with a smaller scar if we, if we sew them up.

DD: All right. Were you able to make any determination by looking at this uh, one 1 ½ to 2 centimeters wound, of how old it was?

SS: I can give you a range. It appeared to be consistent in time with the other, with the other injuries that, that the child sustained. That is sometime within the preceding uh, 12 to 24 hours.

DD: All right. So I, is it, is it your opinion then, at this point and time, that in, in -- you indicated that 95% of the injuries that you observed, appeared to be -- have, have occurred all in the same type of an incident? Is, is that right?

SS: That's right. That's how it appeared, yes.

DD: Okay. And you, and you would classify the vaginal injury, and injury to the head as occurring all on that same transaction?

SS: I can't say that they all occurred at the same moment. They appeared to have roughly the same uh, time course.

DD: Okay. Now, is it possible that uh, for example, the head injury -- the bruise to the head, the cut, the, the injury to the chest, could have occurred -- no, no, that's not a good question. Is there, is there anyway to differentiate between the time, say the vaginal injury -- the, the occurring of the vaginal area, the injury that occurred to the buttocks, from the injuries that occurred to her head -- the cut and the bruise to the chest?

SS: Is there a way to say whether they all occurred at the same time, by the same incident?

DD: What, what I'm getting at is, is, if, if the injuries had -- if several of the injuries, say the vaginal injury and the uh, the injuries to the buttocks occurred after the injury to the head, had occurred. Say three, or four, five or six, or ten hours later? Would that -- would you be able to tell that by looking at her? Do they tend to blend together within -- if they occurred within the last 12 hours?

SS: I don't think I could, could say whether or not they, they occurred contemporaneously, or, or at different times over a relatively short time.

DD: Okay. Now if, well, okay. When you spoke with uh, with the, the child's mother -- well, let me ask you this, when you first came in contact with Rachel -- the child....

SS: Okay.

DD: ....uh, did you uh, was, was the child in the examining room on the table? Or did you encounter the mother carrying the child in? Or how was that?

SS: Give me a moment just to uh....

DD: Okay.

SS: ....think. Uh, the image I remember is of the mother carrying the child in, and placing the child on the bed. Uh, but the child was very quickly you know, on the bed with needs and...

DD: Right. Okay. Now, was the mother saying anything when she was carrying the child in?

SS: Uh, I seem to recall the mother saying something like, "she just had found her that way when she woke up in the morning." And then at that point, I believe the mother was removed from the room for me to do the examination, and determine whether or not we were going to do resuscitation.

DD: Okay. And how was the mothers demeanor?

SS: She was emotionally distraught.

DD: Was she crying?

SS: Yes.

DD: Was she screaming?

SS: Um, I guess you could describe it that way.

DD: Screaming or shouting, saying, "do something, do something, I don't know what happened!"

SS: Yes, she was very upset.

DD: Okay. Was she verbalizing her emotions?

SS: Yes.

DD: Okay. Do you recall specifically anything that she said?

SS: Uh, at that point, just what I said. Uh, just that she, she found her like that and...

DD: Okay.

SS: .....just brought her right in. At that point she was removed from the room.

DD: All right. Who removed her from the room?

SS: Uh, I don't know.

DD: Did she go willing, or reluctantly, when she was removed from the room?

SS: I don't recall. My attention was focused on the child.

DD: All right. And uh.....(tape cut off) All right. Now, doctor, how much time elapsed from the time that you had finished with the baby -- was it that you went and then talked to the mother again?

SS: Uh, it was relatively short period of time. Uh....

DD: I guess it really didn't take you long to conclude that the child was dead?

SS: No.

DD: And not resusive -- well, resuscitatable?

SS: Right.

DD: Okay. Uh, and I guess you probably knew that pretty much right away, from the get go. By the virtue of observations and when you touched her she was cool to touch, that you were not going to be able to bring this baby back?

SS: Correct.

DD: Okay. And then the remainder of your observations and investigations, was just to be thorough, to make sure, right?

SS: Yes.

DD: All right. Uh, how was it that the mother wound up in your office? Did you ask her to wait there? Or ask her to be taken there?

SS: It's routine for a patients family to be placed in the physicians office. Just one of the quieter private places in the department.

DD: So that was something that was done essentially without your request, but that's basically the protocol that's done in that situation.?

SS: Yes.

DD: And then you found her there when you were going to go and talk to her?

SS: Yes.

DD: And how was her demeanor when you walked in the room?

SS: She was still very emotionally upset, distraught.

DD: Was she crying?

SS: I believe so, yes.

DD: All right. Did she uh, did she say anything to you when you walked in? "How's Rachel? What's going on? Please tell me what's going on?" Anything like that, that you recall?

SS: Uh, my recollection is that, when I walked in she simply looked up and was waiting for me to uh, to confirm that the child was in fact dead. Or, to tell her what was -- what happened. I, I don't recall specifically what she said at that moment.

DD: Did she at any time, up to that point and time, and also as well as when you first came in contact with her -- tell you that, "The baby is dead. I know the baby is dead. The baby is dead?" Anything like that?

SS: I don't remember specifically.

DD: Uh, and when you told Angela that the baby was indeed dead, how did she react?

SS: She cried some more. She....

DD: Did she say anything that you recall?

SS: At that -- at that exact moment, uh, I don't recall.

DD: Okay. Did she say anything that, that you recall after, after that?

SS: Well, after she was, after she was able to compose herself enough to, to talk, that is when she uh, made the statements to me that I indicated earlier.

DD: Okay.

SS: Regarding how the....

DD: About what happened?

SS: .....how, how the injuries....

DD: Okay.

SS: .....were supposedly sustained.

DD: So you had already examined the baby, and made your determinations. The baby was DOA before you got this information from the mother?

SS: That's correct.

DD: And you got this information from the mother after you told her that the child was indeed dead?

SS: Yes.

DD: Okay. And when she was relating this story, this story -- this version of what had happened, how was her demeanor? How was she telling you that?

SS: Well, she was still obviously very emotionally distraught, and upset.

DD: Okay. Did she at any time, try to uh, fix blame, asset blame on anybody? Either, herself or her boyfriend, or, the world in general, or anything like that?

SS: Uh, no.

DD: Now, after you obtained this information from her, did you have any other contact with her after that?

SS: No, I didn't.

DD: All right. And how was it that she got out of your office? Did you ask that someone come and get her and escort her out? Or were phone calls made, or something to get her some attention, or....

SS: No.

DD: ....did the police take her? Or what do you recall?

SS: Well, I'll tell you. I don't know. Uh, I went off duty at 7:00 o'clock.

DD: Okay.

SS: And uh, she was still there, and the child was still there, and the police were still there, when I, I left. I believe the child did not leave the department until 9:15 to go to the uh, OME office. So, I left before anybody else.

DD: All right. And to your best recollection, how many police officers did you talk to, if any?

SS: Uh, I believe I spoke to one.

DD: Did you, was that a male or a female?

SS: It's a male, and he was in uniform.

DD: Okay. You didn't speak to any female police officers? May have been in plain clothes?

SS: I don't remember. Uh, I don't remember. Uh, it may have been just before I left. I was -- it was an upsetting occasion for me as well.

DD: I understand.

SS: I don't, I just don't remember.

DD: So you don't recall anyone come up and saying, "I'm detective so, and so" or, "officer, so, and so, and we're doing an investigation here, and I need to talk to you about....?"

SS: Uh, it's possible. Uh, you know. (Looking through photos) I'm trying to see when -- exactly what time the photos were taken. It's possible that as I was getting ready to leave, that uh, the detectives arrived. I just don't, I just don't have the recollection.

DD: All right. And you weren't present when the photographs were taken?

SS: Uh, no.

DD: Okay. And is it safe to say that right at 7:00 o'clock, you were gone? Your were off shift?

SS: Between 7:00 and 7:30.

DD: Okay.

SS: I have to, I have to uh, give a report of patients remaining in the department, to the oncoming physician.

DD: Okay. During, during that transition period then, when you were preparing to leave, did you have any other involvement in this case?

SS: Not that I can recall.

DD: Okay. Uh, now would you say that uh, uh, with your contact with the mother -- with Angela, uh, would you say that her demeanor and her basic level of upset, or how she was behaving -- was it appropriate for the circumstances.

SS: It seemed appropriate for the circumstances.

DD: All right. Uh, all right, that's uh, all I've got.

LB: No more. Thank you doctor.

DD: Okay. That will conclude the interview. Thank you doctor.

SS: You're welcome.

(End of interview)

03172

Exhibit 3

Janice Jean Ophoven, M.D.
Curriculum Vitae

Date and Place of Birth: January 21, 1947, Minneapolis, MN

Education:

Undergraduate Education:

1960-1964	Alexander Ramsey High School, Roseville, MN
1964-1969	BS - University of Minnesota, Minneapolis, MN

Medical Education:

1967-1971	MD - University of Minnesota, Minneapolis, MN

Post Graduate Education:

6/71-6/72	Internship, Department of Pediatrics, University of Minnesota, Minneapolis, MN
7/75-6/76	Residency, Pediatrics, Department of Pediatrics, University of Minnesota, Minneapolis MN
7/75-12/79	Residency, Anatomic Pathology, Department of Laboratory Medicine and Pathology, Specialty Training – Pediatric Pathology, University of Minnesota, Minneapolis, MN
1978-1979	Fellowship in Pediatric Pathology, University of Minnesota, and Minneapolis Children's Medical Center, Minneapolis, MN
1/80-12/80	Fellowship in Forensic Pathology, Hennepin County Medical Examiner's Office, Minneapolis, MN

Medical School Honors:

1971	Upjohn Award - Student most likely to make an important contribution to medicine, awarded by faculty upon graduation.
1970-1971	Member of Disadvantaged Student Selection Committee.
1970-1971	Medical School Class Vice President.

Additional Training:

General Pediatrics internship and residency training, University of Minnesota

Medical Licensure:

Minnesota - 1974 to Present

Missouri - 1973 - 1974

Board Certification:

American Board of Pathology - 1981

American Board of Forensic Pathology - 1981

American Board of Quality Assurance and Utilization Review - 1988

Professional Experience:

1/81-present	Independent Consultation in Pediatric Forensic Pathology
09/03-3/10	Forensic Pathologist, St. Louis County Medical Examiner's Office Assistant Coroner / Medical Examiner
5/03- 10/12	Contract Forensic Pathologist, Minnesota Regional Coroner's Office Assistant Coroner / Medical Examiner for the Counties of: Houston, Carver, Chisago, Dakota, Fillmore, Goodhue, and Scott
6/91-2003	Principal consultant and owner, The Crackleberry Group (Healthcare Consulting)
1/02-11/03	Forensic Pathologist, Midwest Forensic Pathology Assistant Coroner for the Counties of: Anoka, Crow Wing, Meeker, Mille Lacs and Wright
8/94-3/97	Vice President for Medical Policy, Allina Health Care
1/89-6/96	Medical Director of Quality Management, St. Paul Children's Hospital
5/89-1992	Deputy Medical Examiner, Hennepin County Medical Examiner's Office, Minneapolis, MN
1/88-10/88	Director of Medical Review, Health Risk Management, Inc. (Managed Health Care), Minneapolis, MN
4/85-6/88	Director, St. Paul Children's Hospital Laboratories, St. Paul, MN
1/81-3/85	Associate Director, St. Paul Children's Hospital Laboratories, St. Paul, MN
1/80-12/80	Forensic Pathology Fellowship, Hennepin County Medical Examiner's Office, Minneapolis, MN
7/75-12/79	Anatomic Pathology Residency, Department of Laboratory Medicine and Pathology, Specialty Training - Pediatric Pathology, University of Minnesota, Minneapolis, MN
7/75-6/76	Residency, Department of Pediatrics, University of Minnesota, Minneapolis, MN
1/75-6/75	Private Practice, Group Health (Health Maintenance Organization) Minneapolis/St. Paul, MN
1/73-9/74	Private Practice in Pediatrics, Sedalia, Missouri; also consultant for Rural Health Care Delivery Program funded by American Academy of Pediatrics

Memberships:

- Pediatric Pathology Society
- Ramsey County Medical Society
- Minnesota Medical Association
- American College of Physician Executives
- American Medical Association
- National Association of Medical Examiners
- American Academy of Forensic Sciences

Areas of Special Interest:

- Pediatric Forensic Pathology.
- Special areas of interest: MSBP, infanticide, infant apnea and suffocation, head injury / shaken infant.
- Changing Environment of Medical Care with Emphasis on Clinical Quality, Health Care Systems Analysis and Policy.
- Developmental and Gestational Pathology.
- Pediatric Laboratory Medicine.
- Pediatric Hematopathology.
- Pediatric Pulmonary Disease.

Appointments:

- Committee Member, MN Department of Health, Division of Family Health - *Infant Death Investigation Guidelines: To Investigate Sudden, Unexplained Deaths of Infants 0 – 24 months of Age. A Guide for Emergency Medical Services, Law Enforcement and Medical Examiners/Coroners.* Fall 2002
- Child Mortality Review Panel, Minnesota Department of Human Services. 1987 to 1999
- Co-chairman Guidelines Subcommittee Governor's Task on Violence. 1996
- Forensic Consultant to Midwest Resource Center for Child Abuse. 1987 to 1995
- Quality Assurance Director, St. Paul Children's Hospital, St. Paul, MN. 1982 to 1995
- Peer Review and Quality of Care Standards & Guidelines, Senior Consultant, Medicolegal Management, Morrison, CO. 1989 to 1994
- Pediatric Forensic Consultant and Deputy, Hennepin County Medical Examiner's Office, Minneapolis, MN. 1986 to 1994
- Executive Committee, Medical Staff, St. Paul Children's Hospital, St. Paul, MN. 1982 to 1994
- Invited member: Physician Advisor - PMDRG's National Association of Children's Hospitals and Related Institutions, Alexandria, Virginia. 1991 to 1992
- Ramsey County Medical Society Board of Trustees, Hospital Based Physician Representative. 1990 to 1992

- Physician Advisor Board and Physician Advisory Council on Quality. Health One (Hospital Management Corporation) Minneapolis, Minnesota. 1989 to 1991
- Invited member: Task Force on Quality Care and Invited member: Council on Research and Information, National Association of Children's Hospitals and Related Institutions, Alexandria, Virginia. 1989 to 1991
- Invited workshop participant: Special Issues of Child Abuse. Invited presentation: Identification of the Perpetrator in Child Abuse: The Medical Perspective. American Association of Forensic Scientists, National Meeting. Cincinnati, Ohio. February 1990
- Chair - Medical Services Committee, Ramsey County Medical Society. 1986 to 1988
- Board of Directors, Ramsey County Medical Society, St. Paul, MN. 1986 to 1988
- Practice Committee, Pediatric Pathology Society. 1986 to 1988
- Physician Coordinating Committee, Blue Cross and Blue Shield. 1986 to 1988
- Small Area Variations Advisory Committee, Blue Cross and Blue Shield. 1986 to 1988
- Medical Practices and Planning Committee, Minnesota Medical Association, 1984 to 1988
- Clinical Medical Director, St. Paul Children's Hospital, St. Paul, MN. 1982 to 1988
- Consultant and speaker for KTCA (public television) educational production, Newton's Apple. 1982 to 1988
- Clinical Assistant Professor, University of Minnesota, Department of Laboratory Medicine and Pathology. 1986
- Secretary and Board of Trustees Member, Minnesota Medical Association. 1986
- SGCPC Perinatal Protocol Contributor. 1985 to 1986
- Regional Forensic Pathologist Representative to National Center for Missing and Exploited Children. 1984 to 1986
- Minnesota Society of Clinical Pathologists - Professional Relations Committee. 1984 to 1986
- Chairman of Minnesota Medical Association Subcommittee on Organ Transplantation. 1984 to 1986
- Consultant with Dr. Jocelyn Hicks for District of Columbia Hospital Re: Laboratory consolidation project with St. Christopher's Hospital, Philadelphia, PA. Spring 1985
- Executive Committee Member, Study Group of Complications of Perinatal Care, Pittsburgh, PA. 1984 to 1985
- Visiting Faculty to Mayo Clinic, Lectureship on Issues in Pediatric Laboratory Medicine. September, 1984

Research:

- Investigation of childhood injury and child abuse
- Physician Engagement and Participation in Health Care Redesign/Medical Reengineering. 1987 to present
- Nutritional Assessment of the Neonate. 1984 to 1989
- Histopathologic alterations of tracheobronchial respiratory epithelium in high frequency jet ventilation. 1983 to 1989
- Burroughs-Wellcome Exosurf project group: Tracheobronchiopulmonary Morphometric Analysis - Study Pulmonary Pathologist for 10 institutional protocol. 1987 to 1988
- Multifactorial computer analysis of histopathologic classification of lung tumors. Veterans Administration Hospital, Minneapolis, MN. Abstract presented IAP meetings February 1980. 1978 to 1980.
- Bile Acid Research, Gastroenterology Laboratory, University of Minnesota, Minneapolis, MN. June – September 1967; June – September 1968

Past Responsibilities:

- Principal and Chief Medical Officer of the Crackleberry Group. Independent consultants in Health Care: Credentialing, External Peer Review Design, Clinical Guidelines Development, Medical Staff Transformation, Process Reengineering, Conflict Management
- Vice President for Medical Policy, Allina Health Care System. Includes system wide health care policy strategies, credentialing, outcomes, guidelines, clinical process improvement, and physician participation in quality initiatives.
- Medical Director of Quality Management Department. Includes the development, coordination and management of quality assessment, utilization review and risk management of the Medical Services at St. Paul Children's Hospital.
- Management of laboratory services, consultation in pediatric laboratory medicine and pathology in private practice at a teaching pediatric hospital.
- Multiple hospital and organized medicine committee responsibilities with special interest in quality assessment and improvement.
- 24-hour hospital and Midwest Resource Center responsibilities for coordinating laboratory evaluation and directing documentation of child abuse and neglect.
- Teaching responsibilities including Phase D students and pediatric residents - a formal extension of the Hennepin County Medical Center Pathology, Ramsey County Medical Center Pathology and University of Minnesota Laboratory Medicine and Pathology training programs.
- Director of Medical Review at Health Risk Management, a full service company specializing in managing health care costs. Duties included: Recruiting, managing and training medical staff; criteria development; case management program development; Quality Assurance Development and Implementation; medical information resource development and dissemination.
- Assistant Coroner / Medical Examiner at Minnesota Regional Coroner's Office

Current Responsibilities:

- Consultation service in Forensic Pathology with emphasis on child abuse and neglect.
- Research and education in child abuse and neglect. Audiences to include physicians, clinical staff, local law enforcement, medical and legal groups.

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25. Gorlin, Langer, Ophoven, Gilber, Mammel, Coleman, Rosenbery, Rodrigues, Hirton, Opitz, Whitely: Fibrochondrogenesis: A Recently Recognized Chondrodysplasia. Presentation at American Society of Human Genetics - Virginia, 1983; Am J Genetics 35:91A, 1983.
26. Mayer JE, Ewing SL, Ophoven J, Sumner HW, Humphrey EW: Influence of histologic type of survival after curative resection for unidentified lung cancer. Journal Thoracic and Cardiovascular Surgery. 1982; 84:641.
27. Ophoven J: Infectious mononucleosis: Part 2. Serologic Aspects. Lab Med 1979; 10:203.
28. Dehner LP, Sibley RK, Sauk JJ Jr., Vickers RA, Nesbit ME, Leonard AS, Waite DE, Neeley JE, Ophoven J: Malignant melanotic neuroectodermal tumor of infancy. A Clinical, pathologic ultrastructural and tissue culture study. Cancer 1979; 43:1389-1410.

Abstracts & Presentation:

1. OCDLA Seminar, “Child Maltreatment in SBS Cases and the Medical Examiner’s Perspective,” Norman, OK., June 23, 2011
2. CHU National Conference, “Infant Death Investigation-The Forensic Pathologist’s Perspective,” April 7, 2011
3. California Death Penalty Seminar, “Child Victims in Homicide and Sexual Assaults,” Monterey, CA., February 19, 2010
4. New Jersey Public Defenders, “How to Review Forensic Evidence in a Child Case,” Trenton, NJ., June 3, 2010
5. Alabama Criminal Defense Lawyers Association, “New Developments in SBS and Head Trauma,” Birmingham, AL., January 30, 2009

6. CPDA Seminar, "Medical Evidence and Child Sexual Misuse," Palm Springs, CA, December 5, 2008
7. Sixth Annual Crown Defense Conference, "Child Abuse Investigations: A Pathologist's Approach" September 18, 2008
8. Alabama Criminal Defense Lawyer's Association, "Child Sex Abuse: Pediatric Forensics" June 21, 2008
9. California Public Defender's Association, "Medical Examinations/Medical Evidence in Sexual Assault" December 01, 2007
10. National Criminal Defense Lawyer's Association. "Issues in Child Sexual Misuse" August 03, 2007
11. Annual EBMS Meeting. "Forensic Pediatric Pathology – Case Review in Traumatic Brain Injury" May 11, 2007
12. Texas Criminal Defense Lawyer's Association. "Understanding the Scientific Evidence in Sexual Homicides" September 20, 2006
13. Public Defenders of Dakota County. "The Forensic Autopsy Report – A Navigator's Perspective." August 04, 2006
14. CACJ/CPDA Capital Case Defense Seminar. "Scientific Evidence in Sexual Homicides" February 19, 2006
15. University of San Diego School of Law. "Investigate your Case; CSI for Lawyers…Childhood Injuries" January 28, 2006
16. Iowa Public Defender Agency. "An Approach to Sexual Injury Physiology" June 22,2005
17. Iowa Public Defender Agency. "Head Injuries in Childhood; An Evolving Challenge" June 22, 2005
18. North Memorial Hospital: Long Hot Summer Conference. "Unexpected Child and Infant Death: Is It Always Abuse?" March 5, 2005.
19. CACJ/CPDA Capital Case Defense Seminar. "Scientific Evidence in Sexual Crimes." February 20, 2005.
20. CACJ/CPDA Capital Case Defense Seminar. "Head Injuries in Childhood: An Involving Challenge." February 19, 2005.
21. Minnesota Bureau of Criminal Apprehension Training and Development – Death Scene Investigation. "Basics of Child Abuse and Infant Deaths." February 3, 2005.
22. California Public Defender Agency Sexual Crimes Seminar. "Understanding Child-Victim Physiology." October 23, 2004.
23. Minnesota Division International Association for Identification. "Childhood Death Investigation: Unexpected/Unexplained Childhood Deaths." September 16, 2004.
24. St. Louis County Medical Examiner's Office. "Childhood Death Investigation: Unexpected/Unexplained Childhood Deaths." March 8, 2004.
25. CACJ/CPDA Capital Case Defense Seminar. "Head Injuries in Childhood: An Evolving Challenge." February 14, 2004.
26. MN Women Physicians' Retreat. "The Child and Forensic Medicine: A reflection on children in crisis." Co-presented with Susan Roe, MD. October 4, 2003.
27. MN Bureau of Criminal Apprehension. Child Abuse Investigation. "Forensic Pathology of Child Abuse." April 16, 2003

28. 6th Annual LaCrosse Children Maltreatment Conference. "Trauma and the Abused Child" and "Munchausen Syndrome by Proxy." April 4, 2003.
29. Chippewa Valley Technical College Investigators' Annual In-service. "Child Abuse and Neglect" presented by Janice Ophoven, MD and Susan Roe, MD. December 12, 2002.
30. South Carolina State Child Fatality Advisory Committee. Child Fatality Conference - Investigating and Prosecuting Fatal Child Maltreatment. "Forensic Pediatric Autopsy." September 25, 2002
31. Midwest Forensic Pathology. Forensic Nursing III. "Overview of Child Abuse, Vulnerable Adult Abuse, and Domestic Violence." February 28, 2002; May 24, 2002
32. MN Bureau of Criminal Apprehension. Child Abuse Investigation. "Forensic Pathology of Child Abuse." April 17, 2002
33. MN Forensic Pathology, PA. 3rd Annual All Deputy Coroner Meeting. "Munchausen Syndrome by Proxy." April 6, 2002
34. MN Bureau of Criminal Apprehension. Death Scene Investigation Training and Development. "Identifying the Details: Shaken Baby Syndrome and Munchausen Syndrome by Proxy." February 5, 2002
35. Stearns Benton County Child Protection Agency. "Shaken Baby Syndrome - Challenges and Implications." April 27, 2001
36. St. Cloud Hospital. Physicians' Forum. "Shaken Baby Syndrome." March 2, 2001
37. Partners Healthcare Consulting. "Moving into the Driver's Seat – Physician's Guide to Controlling their Future." Invited speaker: "Navigating the Road to Effective Care Management." October 5, 2000
38. MN Bureau of Criminal Apprehension and Ramsey County Medical Examiners' Office. Midwest Homicide Investigative Conference. "A Practical Approach to the Investigation of Child Abuse Homicide." September 7, 2000
39. Niagara County Child Fatality Team Training. Keynote Presentation. "The Investigation of Fatal Child Abuse from the Medical Perspective." June 20, 2000
40. The Alaska Academy of Trial Lawyers 4th Annual Litigators' Conference. "Science and the Law – Out of the 'Frye'ing Pan." April 2000
41. South Carolina Law Enforcement Division. "The Investigation of Fatal Child Abuse from the Medical Perspective." October 1999.
42. Minnesota Bureau of Criminal Apprehension, Child Abuse II Seminar, May 1999.
43. Invited Speaker *Health Care Forum*, Managing Change October 1997.
44. Invited Speaker *Masters 7 Conference for Advanced Death Investigation,* Munchausen's Syndrome by Proxy, St. Louis, MO. July 1997.
45. IHI Workshop with B. Bushick MD, Measurement and Integrated Health Care Systems, workshop presentation, December 1995.
46. The Investigation of Infant Deaths: An Interdisciplinary Symposium, "Coroners / Medical Examiners and Pathologists: Bridging the Roles", June, September 1994
47. Women in Medicine: Finding a Balance - invited keynote speaker and workshop presentations, Breckenridge Colorado, August 1994
48. BCA Law Enforcement Training Seminar, Forensic Issues in Child Abuse, Spring 1994, St. Cloud, MN

49. Development and presentation of three-day workshop with focus on responsibilities in data management and credentialing. Medical Staff Transformation, Middletown Regional Hospital, Middletown, Ohio, March 1994

50. Design and Focus External Peer Review with Medical-Legal Management Inc. 1985-to 1994

    Evansville, Indiana
    Jacksonville, Florida
    Boston, Mass.
    Amarillo, Austin, Fort Worth, Texas
    St. Jose, California

51. Invited Participant, Minnesota Bar Association Annual Trial Lawyer Course, Expert Witness. Bemidji, MN. 1986, 1987, 1988, 1992, 1993, 1994

52. ATLA National Conference - The Catastrophically Injured Infant, Nov 13-14, 1993, Reframing the Causation Issue into a Forensic Context, Atlanta, GA

53. California Ambulatory Surgery Association Research Group, Model for Clinical Guidelines - Best of Practice Model, Lake Tahoe, Fall 1993

54. Colorado Medical Society Woman's Section, The Role of Fear in Health Care Politics, Fall 1993, Snowmass, CO

55. Alaska Trial Lawyers Association, Annual Meeting, full day workshop on Medical Legal issues in Child Abuse, Fall 1993, Anchorage Alaska

56. APQC [American Productivity and Quality Center] "Achieving Results Through Benchmarking" - Benchmarking Week - May 19, 1993, Washington, DC. *Developing "State of the Art" Guidelines for Pediatric Care*

57. Sixth Annual John I. Coe Symposium, Placental and Perinatal Pathology, April 16, 1993, Forensic Issues in Perinatal Medicine Minneapolis, MN

58. Quality Challenge Award Recipients on behalf of the Children's Hospital of St. Paul, MedisGroups National Meeting, April 1993, Washington, DC

59. MediQual National Symposium "Insight", Spring 1993, Washington DC, 2 workshops *MedisGroups and Clinical Guidelines The National Pediatric Network*

60. Development and Implementation - 2 day Clinical Guidelines Exercise, Presbyterian St. Luke's Hospital, Denver Colorado, 1993

61. Multiple Medical Staff Seminars / Presentations on MedisGroups and Health Care Quality including Alliant Health Care Systems, Louisville, KY 1993

62. National Association of Medical Examiners Annual Conference, Milwaukee, WI, Forensic issues in Child Abuse, A Review, Fall 1992

63. Wisconsin Children's Hospital, Annual Retreat, Full day workshop on Medical Staff Transformation, Fall 1992

64. MediQual National Symposium, April 1992, Workshop, Recruiting Physician Participation in Data Management and Clinical Guidelines, Spring 1992, Saddlebrook, Florida

65. Quality Assurance in Anatomic Pathology, Lab Medicine and Pathology Grand Rounds, University of Minnesota, 1992

66. MediQual National Symposium, Spring 1991, Data and Peer Review, Hilton Head, SC

67. Invited Workshop Presentation: Pediatric Forensic Pathology: Wisconsin State Death Investigators Course. Sponsored by the Milwaukee County Medical Examiner, Milwaukee, Wisconsin. Fall 1990

68. Invited Workshop Presentation: Pediatric Forensic Pathology Issues. Sponsored by LCM Laboratories. Sioux Falls, SD. April 1990
69. Invited workshop participant: Special Issues of Child Abuse. Invited presentation: Identification of the Perpetrator in Child Abuse: The Medical Perspective. American Association of Forensic Scientists, National Meeting. Cincinnati, Ohio. February 13, 1990.
70. Invited Workshop Presentation. Pediatric Forensic Pathology at the American Academy of Pediatrics, Orlando, Florida, March 14, 1989.
71. Invited Workshop Presentation, Pediatric Forensic Pathology at the Society for Pediatric Pathology, San Francisco, California, March 5, 1989.
72. Invited Workshop Presentation, Pediatric Forensic Pathology at the Society for Pediatric Pathology, Washington, D.C., February 1988.
73. Georgieff M, Amarnath U, Landon M, Mills M, Ophoven J: Newborn Iron Status of Infants of Diabetic Mothers (IDMS). Ped Res. Submitted and Accepted, December 1987.
74. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Transferrin (TF) and Ferritin (FE) as Markers of Uteroplacental Insufficiency (UPI) in Newborn Infants. Ped Res Submitted Nov 1986. Published April 1987.
75. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Decreased Iron Status in Symptomatic Large-for-Gestational Age (LGA) Infants. Ped Res Submitted Nov 1986. Published April 1987.
76. Georgieff M, Chockalingam U, Murphy E, Ophoven J: Effects of Short and Long-term Prenatal Steroids on Nutritional Proteins in Premature Neonates. Accepted for presentation and published, April 1987.
77. Chockalingam U, Murphy E, Ophoven J, Georgieff M: The Influence of Perinatal Asphyxia on Rapid-turnover Proteins in Newborn Infants. Ped Res Submitted Nov 1986. Published April 1987.
78. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Effects of Short and Long-term Prenatal Steroids on Nutritional Proteins in Premature Neonates. AACC Submitted and Accepted, January, 1987.
79. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Cord Transferrin (TF) and Ferritin (FE) as Markers of Uteroplacental Insufficiency (UPI) in Newborn Infants. AACC Submitted and Accepted, January 1987.
80. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Rapid-Turnover Serum Proteins (RTP) to Evaluate Protein Status of Preterm Infants. AACC Submitted and Accepted, January, 1987.
81. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Association of Decreased Ferritin Levels to Hypoglycemia in Large-for-Gestational Age Infants. American College of Nutrition 28th Annual Meeting. Submitted to Blood, 1987.
82. Mammel M, Ophoven J, Gordon M, TaylorS, Boros S: Tracheal Injury Following High-frequency Oscillation in Laboratory Animals. Ped Res Submitted November 1986.
83. Chockalingam, Murphy, Ophoven, Georgieff: The Affect of Gestation Age Size for Dates and Prenatal Steroids on Cord Transferrin Levels in Preterm and Term Infants. Submitted to the 27th Annual American Nutritional College Meeting, September 1986. Accepted.
84. Chockalingam, Murphy, Ophoven, Georgieff: Influence of Preneonatal Steroids on Nutritional Markers in Premature Infants: Submitted to the 27th Annual American Nutritional College Meeting September 1986. Accepted.

85. Invited Course Participant. University of Indiana: Issues in Child Abuse and Neglect. Indianapolis, Indiana 1986.
86. Georgieff, Sasanow, Mammel, Ophoven, Periera: Prenatal Steroids and Lung Maturity and Size for Dates Affect Neonatal Prealbumin Levels. Ped Res 20; 4(1986) 138A.
87. Georgieff, Sasanow, Mammel, Ophoven, Periera: Prenatal Steroid Administration Enhances Liver Protein Synthesis in Preterm Neonates. Clin res 3; 1(1986) 138A.
88. Invited Speaker, American Academy of Forensic Sciences Workshop on Sexual Abuse in Children, 1986.
89. Mammel M, Ophoven J, Gordon M, Sutton M, Boros S: Proximal Tracheal Inflammation with Three Different High-frequency Ventilators. Clin Res 1985; 33:148A.
90. Lewallen P, Boros S, Mammel M, Coleman M, Ophoven J: Neonatal High-frequency Jet Ventilation: Benefits and Risks. Clin Res 1985; 33:148A.
91. Ophoven J, Tilelli J: Abstract: Hyponatremic Seizures as a Presenting Symptom of Child Abuse. Presented to Conference on Forensic Pediatric Pathology. June, 1985.
92. Ophoven J, Leverone J, Moen T: Abstract: Congenital Idiopathic Subglottic Stenosis Presenting as Sudden Infant Death Syndrome. Presented to Conference on Forensic Pediatric Pathology. June 1985.
93. Invited Workshop Participant. American Academy of Forensic Sciences; Child Sexual Abuse. New Orleans, 1985.
94. Ophoven J, Mammel M, Coleman M, Boros S: Necrotizing Tracheobronchitis; A New Complication of Neonatal Mechanical Ventilation. Laboratory Investigations vol. 52, 49A 1985. Presentation at IAP Meetings, 1985.
95. Lectureship on Issues in Pediatric Laboratory Medicine. Mayo Clinic September, 1984
96. Lewallen P, Boros S, Mammel M, Coleman M, Ophoven J: Neonatal High-frequency Jet Ventilation: Four Years Experience. Clin Res 1984; 32:814A.
97. Mammel M, Ophoven J, Gordon M, Sutton M, Boros S: High-frequency Ventilation Produces Inflammatory Injuries in the Proximal Trachea. Clin Res 1984; 32:815A.
98. Dehner, Ophoven, et. al.: Unusual Presentation of Childhood Rhabdomyosarcoma. Presented at Pediatric Pathology Meetings. February 1983.
99. Ophoven J, Mammel M, Gordon M, Boros S: High-frequency Jet Ventilation: Tracheobronchial Histopathology. Clin Res 1983; 31: 142A.
100. Ophoven J, Mammel M, Gordon M, Boros S: High-frequency Jet Ventilation: Tracheobronchial Histopathology. Pediatr Res 1983; 17: 386A.

Exhibit 4

DECLARATION OF JANICE OPHOVEN, M.D.

I, Dr. Janice Ophoven, declare under penalty of perjury the following to be true to the best of my information and belief:

1. I am an Assistant Coroner at Midwest Forensic Pathology in Minneapolis, Minnesota, and the principal consultant and owner of The Crackleberry Group (Healthcare Consulting). My area of specialty is pediatric forensic pathology. A copy of my *curriculum vitae*, which reflects my education and experience, is true and correct and attached hereto as "Attachment A."

2. At the request of counsel for Barry Lee Jones ("Mr. Jones"), I conducted a pediatric forensic pathology review of the autopsy records and supporting documentation of Rachel Gray.

3. The purpose of the forensic pathology consultation was to assess the validity of the conclusions drawn by the medical examiner as to the injuries inflicted on Rachel Gray and the nature and causation of her death.

4. The materials I reviewed to prepare for the forensic pathology consultation included evaluation and analysis of tissue samples of Rachel Gray; and review of all available medical, police, and legal records.

5. My observations, impressions and my professional opinions and set forth in the Report attached hereto as "Attachment B."

6. The observations, impressions and professional opinions set forth in the

Report are true and correct.

I declare under the penalty for perjury under the laws of the United States and the State of Minnesota, that the foregoing is true and correct.

Signed this 18 day of December 2002.

Janice Ophoven, M.D.

Attachment A

Curriculum Vitae

Name: Janice Jean Ophoven, M.D.

Date and Place of Birth: January 21, 1947; Minneapolis, Minnesota

Education:

Undergraduate Education:

1960-1964 Alexander Ramsey High School, Roseville, Minnesota

1964-1969 University of Minnesota, Minneapolis, Minnesota;
Bachelor of Science Degree

Medical Education:

1967-1971 University of Minnesota, Minneapolis, MN - M.D.

Post Graduate Education:

- Residency in Pediatrics, University of Minnesota, Minneapolis, MN
- Residency in Anatomic Pathology, University of Minnesota, Minneapolis, MN
- Specialty Training in Pediatric Pathology, University of Minnesota, and Minneapolis Children's Medical Center, Minneapolis, MN
- Fellowship in Forensic Pathology, Hennepin County Medical Examiner's Office, Minneapolis, MN

Professional Experience:

6/71-6/72	Internship, Department of Pediatrics, University of Minnesota, Minneapolis, MN.
1/73-9/74	Private Practice in Pediatrics, Sedalia, Missouri; also consultant for Rural Health Care Delivery Program funded by American Academy of Pediatrics.
1/75-6/75	Private Practice, Group Health (Health Maintenance Organization) Minneapolis/St. Paul, MN.
7/75-6/76	Residency, Department of Pediatrics, University of Minnesota, Minneapolis, MN.
7/75-12/79	Anatomic Pathology Residency, Department of Laboratory Medicine and Pathology, Specialty Training - Pediatric Pathology, University of Minnesota, Minneapolis, MN.

1/80-12/80	Forensic Pathology Fellowship, Hennepin County Medical Examiner's Office, Minneapolis, MN.
1/81-present	Independent Consultation in Pediatric Forensic Pathology
1/81-3/85	Associate Director, St. Paul Children's Hospital Laboratories, St. Paul, MN.
4/85-6/88	Director, St. Paul Children's Hospital Laboratories, St. Paul, MN
1/88-10/88	Director of Medical Review, Health Risk Management, Inc. (Managed Health Care), Minneapolis, MN.
5/89-1992	Deputy Medical Examiner, Hennepin County Medical Examiner's Office, Minneapolis, MN.
1/89 -6/96	Medical Director of Quality Management, St. Paul Children's Hospital.
8/94-3/97	Vice President for Medical Policy, Allina Health Care
6/91-present	Principal consultant and owner, The Crackleberry Group (Healthcare Consulting)
1/02 -present	Assistant Coroner, Midwest Forensic Pathology

Medical Licensure:

Minnesota - 1974 to Present
Missouri - 1973 - 1974

Board Certification:

American Board of Pathology - 1981
American Board of Forensic Pathology - 1981
American Board of Quality Assurance and Utilization Review - 1988

Additional Training:

General Pediatrics internship and residency training, University of Minnesota

Memberships:

1. Pediatric Pathology Society
2. Ramsey County Medical Society
3. Minnesota Medical Association
4. American College of Physician Executives
5. American Medical Association

Appointments:

1. Quality Assurance Director, St. Paul Children's Hospital, St. Paul, MN. 1982 to 1995.
2. Clinical Medical Director, St. Paul Children's Hospital, St. Paul, MN. 1982 – 1988
3. Consultant and speaker for KTCA (public television) educational production, Newton's Apple. 1982 to 1988
4. Executive Committee, Medical Staff, St. Paul Children's Hospital, St. Paul, MN. 1982 to 1994.
5. Visiting Faculty to Mayo Clinic, Lectureship on Issues in Pediatric Laboratory Medicine. September, 1984
6. Executive Committee Member, Study Group of Complications of Perinatal Care, Pittsburgh, PA. 1984-1985
7. Regional Forensic Pathologist Representative to National Center for Missing and Exploited Children. 1984-1986
8. Chairman of Minnesota Medical Association Subcommittee on Organ Transplantation. 1984 - 1986.
9. Minnesota Society of Clinical Pathologists - Professional Relations Committee. 1984 - 1986.
10. Medical Practices and Planning Committee, Minnesota Medical Association, 1984 to 1988.
11. Consultant with Dr. Jocelyn Hicks for District of Columbia Hospital Re: Laboratory consolidation project with St. Christopher's Hospital, Philadelphia, PA. Spring 1985
12. SGCPC Perinatal Protocol Contributor. 1985 - 1986.
13. Secretary and Board of Trustees Member, Minnesota Medical Association. 1986.
14. Chair - Medical Services Committee, Ramsey County Medical Society. 1986 - 1988.
15. Board of Directors, Ramsey County Medical Society, St. Paul, MN. 1986-1988.
16. Practice Committee, Pediatric Pathology Society. 1986-1988
17. Physician Coordinating Committee, Blue Cross and Blue Shield. 1986-1988

18. Small Area Variations Advisory Committee, Blue Cross and Blue Shield. 1986-1988
19. Pediatric Forensic Consultant and Deputy, Hennepin County Medical Examiner's Office, Minneapolis, MN. 1986 to 1994.
20. Clinical Assistant Professor, University of Minnesota, Department of Laboratory Medicine and Pathology. 1986 to present.
21. Special Consultant to Ramsey County Medical Examiner's Office, St. Paul, MN. 1986 to present.
22. Forensic Consultant to Midwest Resource Center for Child Abuse. 1987 to 1995.
23. Child Mortality Review Panel, Minnesota Department of Human Services. 1987 to 1999.
24. Physician Advisor Board and Physician Advisory Council on Quality. Health One (Hospital Management Corporation) Minneapolis, Minnesota. 1989-1991
25. Invited member: Task Force on Quality Care and Invited member: Council on Research and Information, National Association of Children's Hospitals and Related Institutions, Alexandria, Virginia. 1989 – 1991
26. Peer Review and Quality of Care Standards & Guidelines, Senior Consultant, Medicolegal Management, Morrison, CO. 1989 – 1994.
27. Invited workshop participant: Special Issues of Child Abuse. Invited presentation: Identification of the Perpetrator in Child Abuse: The Medical Perspective. American Association of Forensic Scientists, National Meeting. Cincinnati, Ohio. February 1990
28. Ramsey County Medical Society Board of Trustees, Hospital Based Physician Representative. 1990-1992
29. Invited member: Physician Advisor - PMDRG's National Association of Children's Hospitals and Related Institutions, Alexandria, Virginia. 1991 - 1992
30. Co-chairman Guidelines Subcommittee Governor's Task on Violence. 1996

Medical School Honors:

1971	Upjohn Award - Student most likely to make an important contribution to medicine, awarded by faculty upon graduation.
1970-1971	Member of Disadvantaged Student Selection Committee.
1970-1971	Medical School Class Vice President.

Research:

- Bile Acid Research, Gastroenterology Laboratory, University of Minnesota, Minneapolis, MN. 6/67-9/67, 6/68-9/68.
- Multifactorial computer analysis of histopathologic classification of lung tumors, Veterans Administration Hospital, Minneapolis, MN. Abstract presented IAP meetings February 1980. 1978-1980.
- Histopathologic alterations of tracheobronchial respiratory epithelium in high frequency jet ventilation. 1983-1989
- Nutritional Assessment of the Neonate. 1984-1989
- Burroughs-Wellcome Exosurf project group: Tracheobronchiopulmonary Morphometric Analysis - Study Pulmonary Pathologist for 10 institutional protocol. 1987-1988
- Physician Engagement and Participation in Health Care Redesign/Medical Reengineering. 1987 to present
- Investigation of childhood injury and child abuse

Areas of Special Interest:

1. Pediatric Forensic Pathology.
2. Changing Environment of Medical Care with Emphasis on Clinical Quality, Health Care Systems Analysis and Policy.
3. Developmental and Gestational Pathology.
4. Pediatric Laboratory Medicine.
5. Pediatric Hematopathology.
6. Pediatric Pulmonary Disease.
7. Special areas of interest: MSBP, infanticide, infant apnea and the suffocated baby, abandon newborn, shaken infant.

Past Responsibilities:

1. Vice President for Medical Policy, Allina Health Care System. Includes system wide health care policy strategies, credentialing, outcomes, guidelines, clinical process improvement, and physician participation in quality initiatives.
2. Medical Director of Quality Management Department. Includes the development, coordination and management of quality assessment, utilization review and risk management of the Medical Services at St. Paul Children's Hospital.
3. Management of laboratory services, consultation in pediatric laboratory medicine and pathology in private practice at a teaching pediatric hospital.
4. Multiple hospital and organized medicine committee responsibilities with special interest in quality assessment and improvement.
5. 24-hour hospital and Midwest Resource Center responsibilities for coordinating laboratory evaluation and directing documentation of child abuse and neglect.
6. Teaching responsibilities including Phase D students and pediatric residents, as well as, a formal extension of the Hennepin County Medical Center Pathology, Ramsey County Medical Center Pathology and University of Minnesota Laboratory Medicine and Pathology training programs.
7. Director of Medical Review at Health Risk Management, a full service company specializing in managing health care costs. Duties included: Recruiting, managing and training medical staff; criteria development; case management program development; Quality Assurance Development and Implementation; medical information resource development and dissemination.

Current Responsibilities:

1. Consultation service in Forensic Pathology with emphasis on child abuse and neglect.
2. Principal and Chief Medical Officer of the Crackleberry Group. Independent consultants in Health Care: Credentialing, External Peer Review Design, Clinical Guidelines Development, Medical Staff Transformation, Process Reengineering, Conflict Management
3. Research and education in child abuse and neglect. Including physicians, clinical staff, local law enforcement, medical and legal groups on child abuse and neglect.
4. Consultant for Ramsey (St. Paul, MN) County Medical Examiners' Office in child abuse, neglect and other special forensic cases.

Bibliography:

1. Ophoven J: Infectious mononucleosis: Part 2. Serologic Aspects. Lab Med 1979; 10:203.
2. Dehner LP, Sibley RK, Sauk JJ Jr., Vickers RA, Nesbit ME, Leonard AS, Waite DE, Neeley JE, Ophoven J: Malignant melanotic neuroectodermal tumor of infancy. A Clinical, pathologic ultrastructural and tissue culture study. Cancer 1979; 43:1389-1410.
3. Mayer JE, Ewing SL, Ophoven J, Sumner HW, Humphrey EW: Influence of histologic type of survival after curative ressection for unidentified lung cancer. Journal Thoracic and Cardiovascular Surgery. 1982; 84:641.
4. Gorlin, Langer, Ophoven, Gilber, Mammel, Coleman, Rosenbery, Rodrigues, Hirton, Opitz, Whitely: Fibrochondrogenesis: A Recently Recognized Chondrodysplasia. Presentation at American Society of Human Genetics - Virginia, 1983; Am J Genetics 35:91A, 1983.
5. Ophoven, Boros, et. al. Tracheobronchial histopathology associated with high-frequency jet ventilation. Critical Care Medicine, July 1984; 12:829-832.
6. Whitley C, Langer L, Ophoven J, Gilbert E, Gonzalez C, Mammel M, Coleman M, Rosenberg S, Rodrigues C, Sibley R, Horton W, Opitz J, Gorlin R: Fibrochondrogenesis: Lethal Autosomal Recessive Chondrodysplasia with Distinctive Cartilage Histopathy. Am J Med Gen, 1985; 19:265-275.
7. Boros, Mammel, Coleman, Lewallen, Gordon, Bing, Ophoven: Neonatal High-Frequency Ventilation: Four years experience. Pediatrics 1985; 75:657.
8. Mammel, Ophoven, Lewallen, Gordon, Sutton, Boros: High-frequency ventilation and tracheal injuries. Pediatrics 1986; 77:608.
9. Boros, Mammel, Lewallen, Coleman, Gordon, Ophoven: Necrotizing tracheobronchitis: A complication of high-frequency ventilation. J of Peds, 1986.
10. Georgieff, Sasanow, Mammel, Ophoven, Pereira: Cord Pre-Albumin Values in Newborn Infants: Effect of Prenatal Steroids, Pulmonary Maturity and Size for Dates. J of Peds 1986; 108:972-976.
11. Tilleli J, Ophoven J: Hyponatremic Seizures as a Presenting Symptom of Child Abuse. Forensic Science International. 30 (1986) 213-217.
12. Chockalingam U, Murphy E, Ophoven J, Georgieff M: The influence of gestational age, size for dates, and prenatal steroids on cord transferrin levels in newborn infants. J Ped Gastroenterology and Nutrition. Accepted.
13. Georgieff M, Chockalingam U, Sasanow S, Gunter E, Murphy E, Ophoven J: The effect of antenatal betamethasone exposure on nutritional protein and fat-soluble vitamin levels in premature newborn infants. Submitted to Lancet.

14. Chockalingam U, Murphy E, Ophoven J, Weisdorf S, Georgieff M: Cord Transferrin and Ferritin Levels in Newborn Infants with Prenatal Uteroplacental Insufficiency and Chronic Hypoxia. J Pediatrics 1987; 111:283-6

15. Georgieff M, Amarnath U, Murphy E, Ophoven J: Serum Transferrin Levels in the Longitudinal Assessment of Protein-Energy Status in Preterm Infants. Submitted to the Journal of Pediatric Gastroenterology, January 1988.

16. Tuna I, Bessinger F, Ophoven J, Edwards J: Acute Angular Origin of Left Coronary Artery from Aorta: An Unusual Case of Left Ventricular Failure in Infancy. Pediatr Cardiol 10:39-43, 1989.

17. Amarnath U, Ophoven J, Mills M, Murphy E, Georgieff M: The Relationship Between Decreased Iron Stores and Neonatal Hypoglycemia in Large-for-dates Newborn Infant. Act Paed Scand. Submitted September 1988

18. Georgieff M, Chockalingam U, Sasanow S, Gunter E, Murphy E, Ophoven J: The Effect of Antenatal Betamethasone on Cord Blood Concentrations of Retinol-Binding Protein, Transthyretin, Transferrin, Retinol and Vitamin E. J Ped Gastroenterology and Nutrition. Accepted August 1988.

19. Ophoven J: Pediatric Forensic Pathology Handbook - An Annotated Bibliography with Commentary. 1988, revised 1989.

20. Velasco A, Ophoven J, Priest J, Brennom W: Paratesticular Malignant Mesothelioma Associated With Abdominoscrotal Hydrocele. J Ped Surg 23:11 (1988) 1065-1067

21. Ophoven J: Pediatric Forensic Pathology in *Pediatric Pathology*. eds. T. Stocker, L.P. Dehner, Lippincott Pub. Philadelphia 1991

22. Study Group for Complications of Perinatal care, Perinatal Autopsy Protocol: A Model, Armed Forced Institute of Pathology, 1994.

23. Ophoven J: Forensic Pathology in Pathology of the Fetus and Newborn, ed. Enid Gilbert-Barness, Mosby, Philadelphia, 1997.

Abstracts & Presentations:

1. Ophoven J, Mammel M, Gordon M, Boros S: High-frequency Jet Ventilation: Tracheobronchial Histopathology. Clin Res 1983; 31: 142A.
2. Ophoven J, Mammel M, Gordon M, Boros S: High-frequency Jet Ventilation: Tracheobronchial Histopathology. Pediatr Res 1983; 17: 386A.
3. Dehner, Ophoven, et. al.: Unusual Presentation of Childhood Rhabdomyosarcoma. Presented at Pediatric Pathology Meetings. February 1983.
4. Lewallen P, Boros S, Mammel M, Coleman M, Ophoven J: Neonatal High-frequency Jet Ventilation: Four Years Experience. Clin Res 1984; 32:814A.
5. Mammel M, Ophoven J, Gordon M, Sutton M, Boros S: High-frequency Ventilation Produces Inflammatory Injuries in the Proximal Trachea. Clin Res 1984; 32:815A.
6. Lectureship on Issues in Pediatric Laboratory Medicine. Mayo Clinic September, 1984
7. Mammel M, Ophoven J, Gordon M, Sutton M, Boros S: Proximal Tracheal Inflammation with Three Different High-frequency Ventilators. Clin Res 1985; 33:148A.
8. Lewallen P, Boros S, Mammel M, Coleman M, Ophoven J: Neonatal High-frequency Jet Ventilation: Benefits and Risks. Clin Res 1985; 33:148A.
9. Ophoven J, Mammel M, Coleman M, Boros S: Necrotizing Tracheobronchitis; A New Complication of Neonatal Mechanical Ventilation. Laboratory Investigations vol. 52, 49A 1985. Presentation at IAP Meetings, 1985.
10. Ophoven J, Tilelli J: Abstract: Hyponatremic Seizures as a Presenting Symptom of Child Abuse. Presented to Conference on Forensic Pediatric Pathology. June, 1985.
11. Ophoven J, Leverone J, Moen T: Abstract: Congenital Idiopathic Subglottic Stenosis Presenting as Sudden Infant Death Syndrome. Presented to Conference on Forensic Pediatric Pathology. June 1985.
12. Chockalingam, Murphy, Ophoven, Georgieff: Influence of Preneonatal Steroids on Nutritional Markers in Premature Infants: Submitted to the 27th Annual American Nutritional College Meeting September 1986. Accepted.
13. Invited Workshop Participant. American Academy of Forensic Sciences; Child Sexual Abuse. New Orleans, 1985.
14. Chockalingam, Murphy, Ophoven, Georgieff: The Affect of Gestation Age Size for Dates and Prenatal Steroids on Cord Transferrin Levels in Preterm and Term Infants. Submitted to the 27th Annual American Nutritional College Meeting September 1986. Accepted.

15. Invited Course Participant. University of Indiana: Issues in Child Abuse and Neglect. Indianapolis, Indiana 1986.
16. Georgieff, Sasanow, Mammel, Ophoven, Periera: Prenatal Steroids and Lung Maturity and Size for Dates Affect Neonatal Prealbumin Levels. Ped Res 20; 4(1986) 138A.
17. Georgieff, Sasanow, Mammel, Ophoven, Periera: Prenatal Steroid Administration Enhances Liver Protein Synthesis in Preterm Neonates. Clin res 3; 1(1986) 138A.
18. Mammel M, Ophoven J, Gordon M, TaylorS, Boros S: Tracheal Injury Following High-frequency Oscillation in Laboratory Animals. Ped Res Submitted November 1986.
19. Chockalingam U, Murphy E, Ophoven J, Georgieff M: The Influence of Perinatal Asphyxia on Rapid-turnover Proteins in Newborn Infants. Ped Res Submitted Nov 1986. Published April 1987.
20. Invited Speaker, American Academy of Forensic Sciences Workshop on Sexual Abuse in Children, 1986.
21. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Transferrin (TF) and Ferritin (FE) as Markers of Uteroplacental Insufficiency (UPI) in Newborn Infants. Ped Res Submitted Nov 1986. Published April 1987.
22. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Decreased Iron Status in Symptomatic Large-for-Gestational Age (LGA) Infants. Ped Res Submitted Nov 1986. Published April 1987.
23. Georgieff M, Chockalingam U, Murphy E, Ophoven J: Effects of Short and Long-term Prenatal Steroids on Nutritional Proteins in Premature Neonates. Accepted for presentation and published, April 1987.
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26. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Rapid-Turnover Serum Proteins (RTP) to Evaluate Protein Status of Preterm Infants. AACC Submitted and Accepted, January, 1987.
27. Chockalingam U, Murphy E, Ophoven J, Georgieff M: Association of Decreased Ferritin Levels to Hypoglycemia in Large-for-Gestational Age Infants. American College of Nutrition 28th Annual Meeting. Submitted to Blood, 1987.
28. Georgieff M, Amarnath U, Landon M, Mills M, Ophoven J: Newborn Iron Status of Infants of Diabetic Mothers (IDMS). Ped Res. Submitted and Accepted, December 1987.

29. Invited Participant, Minnesota Bar Association Annual Trial Lawyer Course, Expert Witness. Bemidji, MN. 1986, 1987, 1988, 1992, 1993, 1994
30. Invited Workshop Presentation, Pediatric Forensic Pathology at the Society for Pediatric Pathology, Washington, D.C., February 1988.
31. Invited Workshop Presentation, Pediatric Forensic Pathology at the Society for Pediatric Pathology, San Francisco, California, March 5, 1989.
32. Invited Workshop Presentation. Pediatric Forensic Pathology at the American Academy of Pediatrics, Orlando, Florida, March 14, 1989.
33. Invited workshop participant: Special Issues of Child Abuse. Invited presentation: Identification of the Perpetrator in Child Abuse: The Medical Perspective. American Association of Forensic Scientists, National Meeting. Cincinnati, Ohio. 2/13/90.
34. Invited Workshop Presentation. Pediatric Forensic Pathology Issues. Sponsored by LCM Laboritories. Sioux Falls, SD. April 1990
35. Invited Workshop Presentation. Pediatric Forensic Pathology: Wisconsin State Death Investigators Course. Sponsored by the Milwaukee County Medical Examiner, Milwaukee, Wisconsin. Fall 1990
36. MediQual National Symposium, Spring 1991, Data and Peer Review, Hilton Head, SC
37. MediQual National Symposium, April 1992, Workshop, Recruiting Physician Participation in Data Management and Clinical Guidelines, Spring 1992, Saddlebrook, Florida
38. Quality Assurance in Anatomic Pathology, Lab Medicine and Pathology Grand Rounds, University of Minnesota, 1992
39. National Association of Medical Examiners Annual Conference, Milwaukee, WI, Forensic issues in Child Abuse, A Review, Fall 1992
40. Wisconsin Children's Hospital, Annual Retreat, Full day workshop on Medical Staff Transformation, Fall 1992
41. MediQual National Symposium "Insight", Spring 1993, Washington DC, 2 workshops *MedisGroups and Clinical Guidelines The National Pediatric Network*
42. Quality Challenge Award Recipients on behalf of the Children's Hospital of St. Paul, MedisGroups National Meeting, April 1993, Washington, DC
43. Sixth Annual John I. Coe Symposium, Placental and Perinatal Pathology, April 16, 1993, Forensic Issues in Perinatal Medicine Mpls, MN
44. APQC [American Productivity and Quality Center] "Achieving Results Through Benchmarking" - Benchmarking Week - May 19, 1993, Washington, DC. *Developing "State of the Art" Guidelines for Pediatric Care*
45. ATLA National Conference - The Catastrophically Injured Infant, Nov 13-14, 1993, Reframing the Causation Issue into a Forensic Context, Atlanta, GA

46. Alaska Trial Lawyers Association, Annual Meeting, full day workshop on Medical Legal issues in Child Abuse, Fall 1993, Anchorage Alaska

47. Development and Implementation - 2 day Clinical Guidelines Exercise, Presbyterian St. Luke's Hospital, Denver Colorado, 1993

48. Multiple Medical Staff Seminars / Presentations on MedisGroups and Health Care Quality including Alliant Health Care Systems, Louisville, KY 1993

49. Design and Focus External Peer Review with Medical-Legal Management Inc. 1985-to 1994
    Evansville, Indiana
    Jacksonville, Florida
    Boston, Mass.
    Amarillo, Austin, Fort Worth, Texas
    St. Jose, California

50. California Ambulatory Surgery Association Research Group, Model for Clinical Guidelines - Best of Practice Model, Lake Tahoe, Fall 1993

51. Colorado Medical Society Woman's Section, The Role of Fear in Health Care Politics, Fall 1993, Snowmass, CO

52. BCA Law Enforcement Training Seminar, Forensic Issues in Child Abuse, Spring 1994, St. Cloud, MN

53. Development and presentation of three-day workshop with focus on responsibilities in data management and credentialing. Medical Staff Transformation, Middletown Regional Hospital, Middletown, Ohio, March 1994

54. The Investigation of Infant Deaths: An Interdisciplinary Symposium, "Coroners / Medical Examiners and Pathologists: Bridging the Roles", June, September 1994

55. Women in Medicine: Finding a Balance - invited keynote speaker and workshop presentations, Breckenridge Colorado, August 1994

56. IHI Workshop with B. Bushick MD, Measurement and Integrated Health Care Systems, workshop presentation, December 1995.

57. Invited Speaker *Masters 7 Conference for Advanced Death Investigation*, Munchausen's Syndrome by Proxy, St. Louis, MO. July 1997.

58. Invited Speaker *Health Care Forum*, Managing Change October 1997.

59. Minnesota Bureau of Criminal Apprehension, Child Abuse II Seminar, May 1999.

60. South Carolina Law Enforcement Division. "The Investigation of Fatal Child Abuse from the Medical Perspective." October 1999.

61. The Alaska Academy of Trial Lawyers 4th Annual Litigators' Conference. "Science and the Law – Out of the 'Frye'ing Pan." April 2000

62. Niagara County Child Fatality Team Training. Keynote Presentation. "The Investigation of Fatal Child Abuse from the Medical Perspective." June 20, 2000

63. MN Bureau of Criminal Apprehension and Ramsey County Medical Examiners' Office. Midwest Homicide Investigative Conference. "A Practical Approach to the Investigation of Child Abuse Homicide." September 7, 2000

64. Partners Healthcare Consulting. "Moving into the Driver's Seat – Physician's Guide to Controlling their Future." Invited speaker: "Navigating the Road to Effective Care Management." October 5, 2000

65. St. Cloud Hospital. Physicians' Forum. "Shaken Baby Syndrome." March 2, 2001

66. Stearns Benton County Child Protection Agency. "Shaken Baby Syndrome - Challenges and Implications." April 27, 2001

67. MN Bureau of Criminal Apprehension. Death Scene Investigation Training and Development. "Identifying the Details: Shaken Baby Syndrome and Munchausen Syndrome by Proxy." February 5, 2002

68. Midwest Forensic Pathology. Forensic Nursing III. "Overview of Child Abuse, Vulnerable Adult Abuse, and Domestic Violence." February 28, 2002

69. MN Forensic Pathology, PA. 3rd Annual All Deputy Coroner Meeting. "Munchausen Syndrome by Proxy." April 6, 2002

70. MN Bureau of Criminal Apprehension. Child Abuse Investigation. "Forensic Pathology of Child Abuse." April 17, 2002

Attachment B

Janice J. Ophoven, M.D.

6494 Crackleberry Trail
Woodbury, MN 55129
651.458.0541
Fax 651.768.0994
ophoven@usinternet.com

Date: 12/18/02

Ms. Sylvia Lett
Federal Public Defender District of Arizona
Capital Habeas Unit
97 East Congress, Suite 130
Tucson, AZ 85701-1716
Fax 520-670-5622

Re: Barry Lee Jones

Ms. Lett,

This correspondence is in response to your request for a summary of my opinions regarding the death of Rachel Gray on May 02, 1994. In preparation of this report I have reviewed the following materials:

Materials

Pima County Medical Examiner Records and Autopsy Report
Victim Impact Statement
Letter (4.15.95) from Kelly Parks to judge
Notice of Hearing
Defendant's Objection to Agg. Disclosure; Motion to Preclude; Motion for Sanctions; and In the Alternative, Motion to Continue Sentencing
Disclosure for Aggravation/Mitigation Hearing
Letter (4.29.95) from Amanda Gray to judge
Letter from Angela Gray to judge, including social history
Letter (4.10.95) from Donna Marini to judge
Letter (4.6.95) from Jonathan Lux to judge
Videotape - Barry Jones tapes 1, 2, 3
Videotape - deposition of Brandie Jones 3.6.95
Videotape - Angela Gray tapes 1 & 2
CD - Pima County Sheriff Photographs (210)
13 - Microscopic Slides
85 - 35mm slides
Kino Hospital records - Rachel Gray 5.2.94
Tucson Police Dept report - R. Law 5.2.94
Tucson Police Dept report - Thompson 5.2.94
Pima County Sheriff Dept report - GM Ruelas 5.2.94
Interview of Angela Gray 5.2.94
Interview of Ron St. Charles 5.2.94
Interview Transcript - Barry Jones 5.2.94
Interview of Amanda Gray 5.2.94
Pima County Sheriff report - PA Amada 5.2.94
Interview transcript of Terry Richmond 5.3.94
Pima County Sheriff report - Rankin 5.3.94
Child Protective Services Non-Accidental Injury and Physical neglect Report
Psychosocial Evaluation of Rebecca Lux 5.9.94
Interview of Rosemary St. Charles 5.11.94
Letter: Ranking to Dept of Public Safety Crime Lab 5.11.94
Pima County Sheriff report - Rankin 5.17.94
Interview of Isobel Tafe 5.19.94
Investigative Report - Barnett Investigations 5.19.94
Interview of Julian Duran 5.19.94
Interview of Larry Jones 5.23.94
Pima County Sheriff report 5.27.94
Interview of Donna Marini 10.31.94
Interview of Rebecca Lux 10.31.94
Interview of Kim Hillman 11.14.94
Interview of Dr. John Howard 11.28.94
Interview of Michael Fleming 3.21.95
Telephonic Interview of Ron St. Charles
Telephonic Interview of Rosemary St. Charles
Deposition transcript - Brandie Jones 3.6.95
Deposition transcript - Stephanie Fleming 3.24.95
Trial transcript - John Howard MD April 1995
Notes: Ed Lukasik, Central Regional Crime Lab
Trial transcript - Edward Lukasik April 1995
State's Closing Argument
Defense's Closing Argument
State's Rebuttal Argument
Letters from Barry Jones to Angela Gray
Pre-sentence Report - Amended Supplemental Report 6.7.95
Testimony- John Howard MD 6.13.95
Letters written for sentencing/disposition in Angela Gray case
Letter from Barry Jones to Harriette Levitt
Pre-sentence Report, Pima County Superior Court
Timeline
Declaration of Rebecca Lux
Pima County Sheriff's Dept Detail Incident Report 1.10.95
Declaration of Janice Ophoven, MD
Arizona Supreme Court Opinion (4.29.97)
Testimony transcript - Dr. John Howard 3.28.95
28 Microscopic Slides
Declaration of Janice Ophoven, MD
University Medical Center medical records - Rachel Gray

Findings

Timelines and Statements

Rachel Gray was born on April 07, 1990 to Angela Gray. Medical records from the University Medical Center (04/07/90-03-02/93) describe a normal child who experienced typical childhood illnesses; immunizations current. Her initial growth pattern showed typical growth and development for a young infant up to age 6 months at just below the 50th percentile for weight, and at just above the 50th percentile for length or height. At that point the growth chart appears to show a subtle decline in weight and by age 2 years and 11 months (3/2/93) her growth had substantially slowed to the 25th percentile for both height and weight. At autopsy Rachel's weight was documented at 12.7 kg and length at 40 inches. This places her at less than the 5th percentile for weight and at the 50th percentile for length.

Rachel resided with her mother; brother, Jonathon Lux (03.07.80); and sister, Rebecca Lux (05.23.83). Approximately one month before Rachel's death, Angela Gray and her three (3) children moved in with Barry Jones and his daughter, Brandie, in his trailer in Pima County, AZ.

Various neighbors described Barry Jones as being a quiet, well-liked man and described Angela Gray as often yelling obscenities and threatening her children, especially when Barry Jones was not present

Sometime in April 1994 Rachel sustained an injury to her nose that resulted in two black eyes. Statements from Angela Gray and Barry Jones describe Rachel having sustained this injury at his brother's home, Larry Jones. The child apparently tripped over a dog or was hit with a rake.

In a videotaped interview (March 6, 1995) of Brandie Jones, she states that Rachel was hit in the stomach with a stick by a young boy on April 30, 1994. She states that after being hit Rachel "went down on her hands and knees and started crying." In a pre-trial interview (March 21, 1995), Michael Fleming, neighbor to Barry Jones, states that a couple of kids had told his wife, Stephanie, that her son, Ryan, had struck Rachel with a stick.

According to Barry Jones, on May 01, 1994 at ~1400 hours Rachel was apparently pushed out of a parked van while playing with neighborhood children. Barry Jones reportedly took Rachel in the van with him to the Quick Mart where he reported an EMT looked at Rachel's cut. During police interview he states that he initially told Angela that he had stopped at the Rural Metro Station. His explanation was that he was afraid to stop because he was driving with a suspended license and without current auto registration.

Angela Gray states that she was not feeling well Sunday, May 1 1994 and therefore spent the majority of the day in bed.

A neighbor, Stephanie Fleming stated to police that on May 01 at approximately 1700 hours Rachel was sitting in front of her trailer, "dazed" in appearance with a "greenish color to her face" and "black bags under her eyes." She noticed that Rachel was "soaking wet" and was "dry heav[ing]." Stephanie. Fleming carried Rachel to Barry Jones who then carried Rachel home.

Angela Gray was observed to be up and around at her residence between 1430 and 1500 on May 1st 1994. She walked to a neighbor's house to check on Brandie Jones.

Angela claims the first time she saw Rachel that day was at ~1930 hours when Barry pulled up in his van with Rachel after reportedly going to the Quick Mart. Angela Gray stated to police that at home she changed Rachel into her pajamas and noticed some bruising on the child's stomach. She claims to not have noticed any additional bruising on the child's face or other parts of her body. Angela Gray stated to police that Rachel was complaining of being thirsty. Rachel would drink and then throw up. Angela Gray stated that Rachel vomited 5-6 times that evening. Angela Gray states that Rachel slept in bed with her and Barry Jones that night.

In a statement given to police on May 17, 1994, Kim Hillman stated that she and Terry "Shane" Richmond went to the Jones/Gray residence on May 01 at ~2100 hours to drop off Brandi Jones who had been at a barbecue at their house. Kim Hillman noted that Rachel was "laying on the couch next to her mom and then she lifted up her head and there was blood all over the pillow." Reportedly Kim Hillman and Mr. Richmond suggested that Rachel be taken to the hospital to obtain medical attention. When asked why she did not take Rachel to the Emergency Room she reported that she was afraid that she would lose her because of the bruises on her body.

Angela, in her statements to the police, reports that Rachel woke her up during the night stating that she was hungry and thirsty. Angela claims that Rachel walked out to the living room and when asked if she was hungry said yes.

At that time Angela made her a burrito. Barry Jones stated that he did hear the microwave during the night. Angela stated that Rachel did not eat the burrito and vomited the milk she drank. Angela reports that she then carried her back to bed because she was half asleep. She noticed a little bleeding on the pillow at that time. She awoke on May 02, 1994 at ~0600 hours and noticed that Rachel was not sleeping with her. She went to check on Rachel and found her in her room, unresponsive.

In addition to transcripts, police investigative reports, autopsy materials, and medical records, counsel has provided me with a timeline describing the last days and hours of Rachel Gray's life. Per the timeline and other records reviewed, there is no documentation of when Rachel was last observed to be well. A neighbor, Isobel Tafe, in a statement made May 19, 1994 claims that she saw Rachel on April 30, 1994 and that she had "a grayish look about her...like she might be sick." Statements regarding Rachel's well-being and history of events on May 01, 1994, made by various people, are somewhat contradictory and inconsistent as to time, place, and sequence. It can be gathered that at sometime in the afternoon of May 01, 1994 Rachel Gray lacerated her scalp. Rachel was noted to be outdoors, possibly riding a bike sometime during the afternoon of May 01, 1994. There is no evidence that Rachel was well on May 01, 1994. There is no evidence that she ate at anytime that day. Michael and Stephanie Fleming both indicate that Rachel's well being was in question in the later afternoon hours of May 01, 1994. She was described as appearing "totally exhausted - had rings around her eyes - dark black rings," looking like she might vomit. According to Barry Jones' statements, an EMT examined Rachel at the "Quick Mart" and told Barry that her head injury did not require medical care. Witnesses observe Rachel, in the late evening hours (~2000 hours) to be lying on the couch with blood on her pillow. Per Angela Gray, Rachel did not eat dinner that night, she vomited 5-6 times that evening, went to bed with Barry and Angela, got up with Angela at sometime during the night, fed her a glass of milk and she vomited again, and she was placed back in bed with Angela and Barry. Rebecca stated that she found Rachel at ~0400 hours May 02, 1994 lying in the doorway and put her to bed. At ~0600 hours Angela Gray awakens to find Rachel no longer in her bed. She went to her bedroom, found her in bed, covered up, unresponsive.

Rachel Gray arrived at Kino Community Hospital Emergency Department on May 02, 1994 at 0616 hours, D.O.A. Barry Jones drove Angela Gray and Rachel to the hospital and left after dropping them off. Upon arrival Rachel was cool and rigor mortis was evident; pupils 4-5 mm and non-reactive, no spontaneous respiratory or cardiac activity noted, rectal temperature 92 degrees Fahrenheit. She had dependent lividitiy, body cool to touch. Multiple bruising was observed over her forehead, face, anterior chest, and anterior abdomen. Abrasions were observed on her anterior chest and legs and laceration was seen in the left occipital region of her skull. The pajamas and panties worn by Rachel when she was brought to the hospital were blood stained.

Information provided from Barry during interviews identify the following:

1. Barry was reportedly distraught on hearing of Rachel's death
2. Barry said he took her out to ride on her bike. Barry said that he pushed her on the bike for 3-4 minutes. Approximately 45 minutes later he reported that she was vomiting.
3. Barry reported that Rachel fell out of the van at 1530
4. Barry said he didn't think she got the abdominal injuries from falling out of the van (it didn't happen like that)
5. Barry told Angela he had taken Rachel to the Rural Metro Station when in fact he had taken her only to the Quick Mart – He was afraid to stop because he was driving with a suspended license. He put the child on the curb out front and came in to the Quick Mart alone.
6. Barry gave her aspirin
7. Barry recalls Angela getting up during the night and hearing the microwave go on
8. Barry stated that Angela was concerned about taking Rachel to the Emergency Room because of the bruises.

Information provided from Angela during interviews

1. Barry said he took Rachel to the paramedics
2. Rachel was afraid of Barry
3. She does not strike her children
4. Rebecca lies
5. Rachel some times has a snotty attitude
6. She tried to do CPR

7. She first saw bruises on Rachel's abdomen on Sunday evening, May 1st
8. Angela attributes the scalp laceration to the fall out of the van
9. The last time she had observed Rachel's vaginal area was 3-4 weeks earlier at the time of a bath
10. She did not cause any of the injuries
11. Rachel's hand and feet where cold when she was putting her pajamas on
12. Rachel was very thirsty and vomited everything she drank
13. Angela was up all Saturday night with the flu
14. She has three kinds of cancer
15. Rachel wanted to sleep by Barry on the night of her death
16. Approximately 2 weeks earlier she was struck in the face by a rake and when she awoke she had 2 black eyes, which had faded substantially but where still present at her death.
17. Barry was gone Saturday night and Angela was alone with Rachel all night and claims to have put her to bed at 10pm
18. Angela got up at 1830 (Sunday, May 1st) and noticed that the child's head is bleeding.

During an evaluation at the University Medical Center on May 9th 1994, with Drs Binkiewicz and Gonzales, Rebecca stated that she had been struck by her mother in many places on her body including her arm, stomach and face.

A witness, Joe Chavez stated that upon learning of the arrest of Angela and Barry Jones, the 2 year olds mother Stephanie Fleming had packed her things and moved within 2 hours without notifying the park office (She left no forwarding address).

a. It was indicated that Stephannie may have somehow intervened between her 2 year old son and Rachel and may have herself inflicted some sort of assault on Rachel late on the afternoon of Sunday May 1ST.
b. He also stated that Stephannie had communicated, one-day prior on Saturday April 30th, that she was planning to stay at the park for another several weeks.

Autopsy Findings

Autopsy was performed by John D. Howard, MD, Forensic Pathologist on May 3, 1994 at the Forensic Science Center. Pathologic diagnoses include:

- Blunt abdominal trauma
  - Multiple contusions and abrasions
  - Laceration of the duodenum
  - Retroperitoneal hemorrhage, fluid accumulation, and gas formation
  - Contusions of the transverse colon
  - Peritonitis
- Blunt head and neck trauma with multiple contusions, abrasions, and scalp laceration
- Blunt extremity trauma with multiple contusions and abrasions
- Blunt genitalia trauma
- Opinion: Death was caused by small bowel laceration due to blunt abdominal trauma

My review of the autopsy included 13 H&E stained tissue slides, 13 trichrome stained tissue slides, 13 iron stained tissue slides, autopsy report, toxicology and chemistry results. In rendering opinions I also considered investigative materials and crime scene investigations as is routine in cases of this nature. The tissue sections included representative section(s) of tissue from:

- Abdominal and pelvic organs
- Chest organs
- Multiple sections of skin and soft tissues
- Brain
- Traumatized bowel - Duodenum

- Sections of skin show bruises and contusion of varying ages and severity
- Section from head of the pancreas and duodenum show evidence of dense inflammation through the wall of the bowel with trans-mural disruption, necrosis and inflammation. A small amount of inflammatory debris is present on the surface of the colon.

- Sections of lung show the presence of early pneumonia which would be expected in a child suffering from this condition [suffering from terminal dehydration and shock].
- Sections of brain show no presence of brain trauma.
- Sections from vagina, labia minora/genital skin shows acute hemorrhage (< 6 hours prior to death).

Vitreous chemistries show serious abnormalities

Sodium:	147 mMOL/L
Potassium:	16.2 mMOL/L
Chloride:	122 mMOL/L
Carbon dioxide:	<5 mMOL/L
Glucose:	24 mg/dl
Urea nitrogen:	29 mg/dl
Creatinine:	0.8 mg/dl

Rachel's weight at autopsy was 12.7 kg, less than weight obtained one year prior (at 2 years 11 months). These findings are consistent with lethal shock and dehydration due to blunt trauma to the abdomen.

Cause of Death: Dehydration and shock due to blunt trauma of the abdomen in the context of battered child syndrome
Manner of Death: Homicide

In reviewing the testimony of Dr John Howard, he provides opinions regarding the age of injuries to Rachel's skin and soft tissue from photographs. He testifies that the genital injuries are consistent with 1 to 2 hours prior to death and he testifies that the abdominal injuries would be a minimum of 12 hours up to 24-36 hours. There were questions posed to Dr. Howard about how the laceration to the scalp could have occurred. These injuries were characterized by him as being consistent with fists, slaps and a crow bar. Dr. Howard characterized this injury as deep or severe. He also characterized it as consistent with a blow administered by a moving object.

The Desert Vista Trailer Park is described as a rough neighborhood with several known child molesters in residence there. There is evidence that the girls have been exposed to sexually inappropriate if not molesting trauma while living with their mother Angela Gray, most notably from an individual named Christopher Tate. Rachel and Rebecca's brother John is also described as exhibiting conduct of sexually aggressive behavior including grabbing girls' breasts and shoving his hands between their legs. There are many statements indicating that Barry Jones in fact on numerous occasions protected the girls in his care from sexually inappropriate behavior and " perverts" in the trailer park.

Refer also to the attached growth charts.

Barry Lee Jones was convicted of sexual assault, child abuse, and felony murder and was sentenced to death.

Opinions
My opinions are represented to a reasonable degree of medical certainty. I have practiced Pediatric Forensic Pathology for almost 25 years and have focused my work on examining, researching, teaching, writing and assisting in the investigation of injuries, and mechanism and manner of death in children. I have had the sad responsibility of participating in over 30 cases of lethal abdominal trauma in young children. The issues in this case represent the typical questions raised from "hidden injuries" to the abdomen of a young child.

Rachel Gray died from a ruptured duodenum with subsequent severe dehydration, shock and peritonitis. Abdominal trauma is not an uncommon cause of death in victims of abuse in children of this age. Crushing injury from a blow or stomp to the upper abdomen will trap vital organs between the inflicting force and the spinal column. If there is no severe hemorrhage associated with the damage, the diagnosis may be delayed for days. This is especially the case if one or more of the responsible adults supervising the child does not recognize the severity of the injury until it is too late. It is not uncommon for these children to be up walking and talking until their vital functions begin to fail.

Rachel Gray died at the Desert Vista Trailer park some time after midnight and many hours before she was found by her mother at 0600 on May 2nd 1994. Her body temperature was recorded as 92 degrees Fahrenheit, and intense liver mortis and rigor mortis was already present when she arrived at the Kino Community Hospital Emergency Department.

Post mortem examination of vitreous chemistries obtained at the Forensic Science Center showed a diagnostic pattern of severe and prolonged dehydration. There is evidence of pre-renal azotemia (increased BUN and Creatinine) with hypernatremia. Her post mortem weight is consistent with these abnormal chemistries and in my opinion represents an injury that had to be present greater than 24 to 48 hour and perhaps longer. It is my opinion to a reasonable degree of medical certainty that the injuries to the vaginal area and to the abdomen were separated by a significant time span, perhaps days. The report that Rachel looked ill on Friday, April 29th is consistent with the abdominal injury being inflicted prior to that time.

It is my opinion to a reasonable degree of medical certainty that Rachel could not have walked to the living room the night of her death.

Rachel Gray showed a pattern of slowed growth and physical evidence of multiple bruises consistent with a diagnosis of a chronically abused child. Rachel lived in a dangerous environment and the risk of physical and sexual violence was high.

It is my opinion to a reasonable degree of medical certainty that the laceration on Rachel's scalp is most consistent with a simple fall against a hard surface. Blows from an unyielding or moving (to the head) object such as a strike from a crow bar would have inflicted an entirely different injury. Scalp trauma can result in significant bleeding even from a small injury. It is my opinion that this laceration did not contribute to her death. If she was carried while bleeding or transport in a vehicle (while bleeding) it would be expected to find her blood on clothing and in the van.

In cases of fatal abdominal trauma the question is rarely what killed the child but more often when and who inflicted the blow or blows. It is my opinion that the statements and investigative reports in this case do not reasonably identify the specific time and in whose hands this child suffered her fatal injury.

The presence of genital trauma without evidence of ejaculate leaves only the conclusion that the child suffered acute injuries, most probably penetrating, shortly before her death. The pattern injury itself does not identify the gender of the perpetrator. Sexual violence against children can occur at the hands of men and women, including mothers.

It is my opinion that Dr. Howard suggested to the jury that the time or age of the bruises on her body of the injuries could be interpreted from the photographs. Interpreting the age of bruises from physical appearance and color is recognized by the forensic community to be very inexact. This kind of interpretation is not considered standard practice in the specialty.

In the hours before Rachel, Angela and Barry went to bed, it would have been evident to anyone with Rachel that she was in need of immediate medical attention. It is my opinion that the decision to withhold medical care is consistent with fatal neglect.

Rachel Gray's short life ended following multiple episodes of inflicted injury. In my opinion her diagnosis is best classified as death due to blunt abdominal trauma associated with battered child syndrome.

If you have any additional questions, or should you need additional information, please do not hesitate to contact me.

Sincerely,

Janice Ophoven, M.D.
Pediatric Forensic Pathologist

Prepared by Jamie Upstrom MD 12/18/02

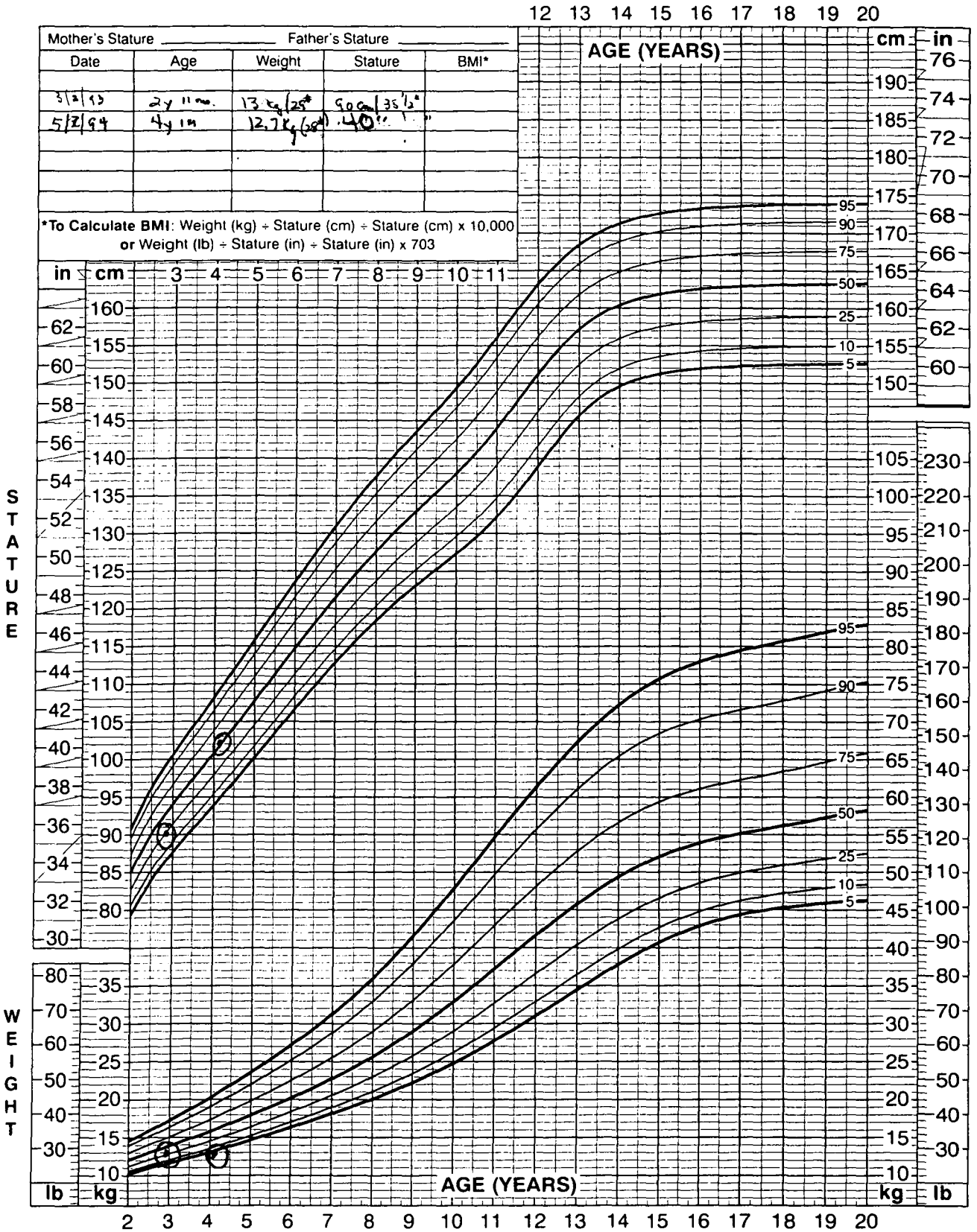
2 to 20 years: Girls
Stature-for-age and Weight-for-age percentiles

NAME Rachel Gray

RECORD #

Mother's Stature		Father's Stature		
Date	Age	Weight	Stature	BMI*
5/2/93	2y 11mo.	13 kg (25#)	90 cm (35 1/2")	
5/7/94	4y 1m	12.7 kg (28#)	40"	

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

CDC
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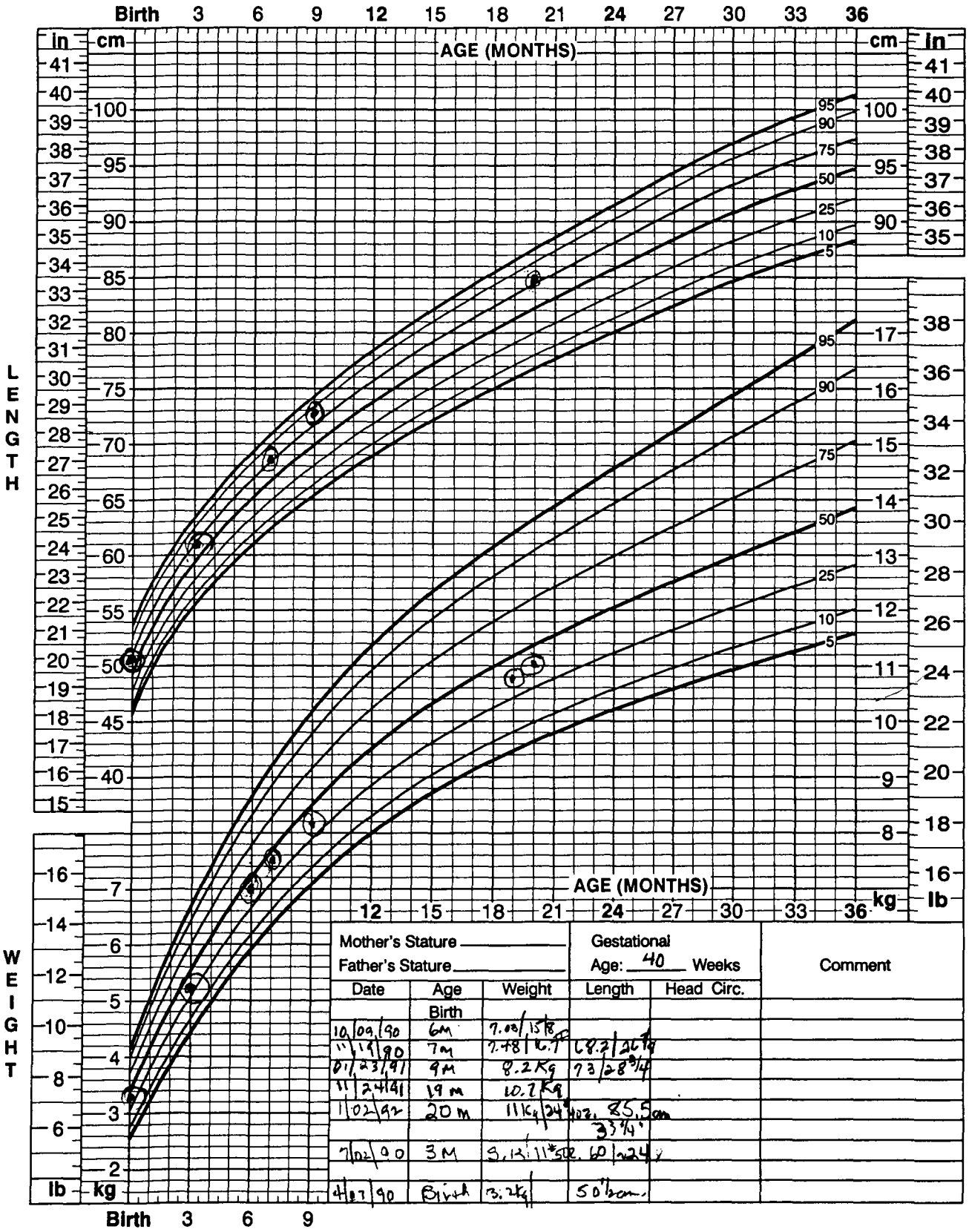
Birth to 36 months: Girls
Length-for-age and Weight-for-age percentiles

NAME Rachel Gray

RECORD # 0



Mother's Stature			Gestational Age: 40 Weeks		Comment
Father's Stature					
Date	Age	Weight	Length	Head Circ.	
	Birth				
10/09/90	6m	7.00/15 8			
11/19/90	7m	7.48/16.7	68.3/26 1/8		
01/23/91	9M	8.2Kg	73/28 3/4		
11/24/91	19 M	10.7Kg			
1/02/92	20 M	11Kg/24	402. 85.5cm 33 3/4"		
7/02/90	3M	5.12: 11*5oz.	60/24		
4/07/90	Birth	3.2Kg	50cm.		

Published May 30, 2000 (modified 4/20/01).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

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Exhibit 5

Janice J. Ophoven, M.D.

6494 Crackleberry Trail
Woodbury, MN 55129
651.458.0541
Fax 651.768.0994
ophoven@usinternet.com

Date: 7/25/2008

Ms. Sylvia Lett
Federal Public Defender District of Arizona
Capital Habeas Unit
407 W. Congress, Suite 501
Tucson, AZ 85701
Fax 520-670-5622

Re: Barry Lee Jones

Ms. Lett,

This correspondence is a supplement to my 2002 report of opinions regarding the death of Rachel Gray on May 02, 1994. I will not repeat my original opinions, which are unchanged.

In preparation of this I have reviewed the declaration and report materials referent to the analysis and opinions of Joel C. Hardin. As you recall, during the course of my review I observed bruises to the body of Rachel that in my opinion have the appearance of footprints. The nature and character of these marks has importance in the analysis of how Rachel suffered the injuries and under what circumstances these bruises were inflicted. I recommended that a technical analysis of these injuries be undertaken to seek additional understanding of the imprint/bruise characteristics. Specifically, I wanted a footprint expert/analyst to evaluate the pattern of bruises to her body to define the bruise characteristics as it relates to the possible imprint of foot or shoe marks on the abdomen of the child.

My review of Mr. Hardin's findings reveals the presence of barefoot imprints consistent with a small person such as a child 5-10 years of age.

The internal injuries to Rachel's abdomen are consistent with stomping type blunt force trauma. These injuries are consistent with a child or small person stomping or jumping on Rachel's abdomen.
I hold these opinions to a reasonable degree of medical certainty.

If you have any additional questions, or should you need additional information, please do not hesitate to contact me.

Sincerely,

Janice Ophoven, M.D.
Pediatric Forensic Pathologist

Exhibit 6

6494 Crackleberry Trail
Woodbury, MN 55129
651.458.0541
Fax 651.768.0994
ophoven@usinternet.com

Janice J. Ophoven,

April 20th, 2009

Ms. Sylvia Lett
Federal Public Defender District of Arizona
Capital Habeas Unit
97 East Congress, Suite 130
Tucson, AZ 85701-1716
Fax 520-670-5622

Re: Barry Lee Jones

Ms. Lett,

This correspondence is in response to your request for a more succinct and updated summary of my opinions regarding the death of Rachael Gray on May 02, 1994. In preparation of this report I have reviewed the following materials:

Materials

Pima County Medical Examiner Records and Autopsy Report
Victim Impact Statement
Letter (4.15.95) from Kelly Parks to judge
Notice of Hearing
Defendant's Objection to Agg. Disclosure; Motion to Preclude; Motion for Sanctions; and In the Alternative, Motion to Continue Sentencing
Disclosure for Aggravation/Mitigation Hearing
Letter (4.29.95) from Amanda Gray to judge
Letter from Angela Gray to judge, including social history
Letter (4.10.95) from Donna Marini to judge
Letter (4.6.95) from Jonathan Lux to judge
Videotape - Barry Jones tapes 1, 2, 3
Videotape - deposition of Brandie Jones 3.6.95
Videotape - Angela Gray tapes 1 & 2
CD - Pima County Sheriff Photographs (210)
13 - Microscopic Slides
85 - 35mm slides
Kino Hospital records - Rachael Gray 5.2.94
Tucson Police Dept report - R. Law 5.2.94
Tucson Police Dept report - Thompson 5.2.94
Pima County Sheriff Dept report - GM Ruelas 5.2.94
Interview of Angela Gray 5.2.94
Interview of Ron St. Charles 5.2.94
Interview Transcript - Barry Jones 5.2.94
Interview of Amanda Gray 5.2.94
Pima County Sheriff report - PA Amada 5.2.94
Interview transcript of Terry Richmond 5.3.94
Pima County Sheriff report - Rankin 5.3.94
Child Protective Services Non-Accidental Injury and Physical neglect Report
Psychosocial Evaluation of Rebecca Lux 5.9.94
Interview of Rosemary St. Charles 5.11.94
Letter: Ranking to Dept of Public Safety Crime Lab 5.11.94
Pima County Sheriff report - Rankin 5.17.94
Interview of Isobel Tafe 5.19.94
Investigative Report - Barnett Investigations 5.19.94
Interview of Julian Duran 5.19.94
Interview of Larry Jones 5.23.94
Pima County Sheriff report 5.27.94
Interview of Donna Marini 10.31.94
Interview of Rebecca Lux 10.31.94
Interview of Kim Hillman 11.14.94
Interview of Dr. John Howard 11.28.94
Interview of Michael Fleming 3.21.95
Telephonic Interview of Ron St. Charles
Telephonic Interview of Rosemary St. Charles
Deposition transcript - Brandie Jones 3.6.95
Deposition transcript - Stephanie Fleming 3.24.95
Trial transcript - John Howard MD April 1995
Notes: Ed Lukasik, Central Regional Crime Lab
Trial transcript - Edward Lukasik April 1995
State's Closing Argument
Defense's Closing Argument
State's Rebuttal Argument
Letters from Barry Jones to Angela Gray
Pre-sentence Report - Amended Supplemental Report 6.7.95
Testimony- John Howard MD 6.13.95
Letters written for sentencing/disposition in Angela Gray case
Letter from Barry Jones to Harriette Levitt
Pre-sentence Report, Pima County Superior Court
Timeline
Declaration of Rebecca Lux
Pima County Sheriff's Dept Detail Incident Report 1.10.95
Declaration of Janice Ophoven, MD
Arizona Supreme Court Opinion (4.29.97)
Testimony transcript - Dr. John Howard 3.28.95
28 Microscopic Slides
Declaration of Janice Ophoven, MD
University Medical Center medical records - Rachael Gray

Medical Findings and Timelines

Growth

Birth April 07, 1990
Normal growth and development up to 6 months of age at the 50th percentile for height and weight
3/2/93 Subtle decrease in growth to ~ age 2 – 25th percentile
Weight at autopsy 12.7 kg < 5th percentile for weight; height at autopsy 40" ~50th percentile

Family consisted of 2 siblings Jonathan 13 years, Rebecca 10 years and mother Brandy
Moved into Barry Jones trailer ~ 1 month prior to death

Recent problems

Black eyes April 1994 - ~ 2 weeks prior to death
Witness – Child struck in abdomen with stick April 30th, 1994; fell to ground and cried
May 1st, 1994 – lacerated scalp
Witness - Child appeared unwell, poor color, dry heaving type vomiting - afternoon [~5 pm] May 1st, 1994
Bruises observed to abdomen by Mom afternoon May 1st, 1994
Continue to drink, complained of thirst and repeated vomit through the evening of May 1st
Witness - Appeared ill on couch with blood from scalp [9 pm May 1st, 1994] – advised taking her to doctor
Put to bed at 10 pm
Found unresponsive at 6 am May 2nd 1994
Arrived to hospital DOA in full rigor mortis with dependant lividity; body cool to touch
Multiple bruises was observed over her forehead, face, anterior chest, and anterior abdomen; abrasions were observed on her anterior chest and legs; laceration was seen in the left occipital region of her skull; blood stained panties

From history

Onset and occurrence of bruises to abdomen – unknown
Onset and occurrence of the other external bruises and abrasions – unknown
Fatal blunt force trauma to the abdomen – days prior to death; events unknown
Onset of scalp laceration – afternoon May 1st
Onset of obvious abdominal symptoms - unknown
Onset of increasing thirst and vomiting – unknown; confirmed May 1st
Onset of vaginal bleeding – unknown,

List of injuries from the postmortem examination May 3rd, 1994

Blunt abdominal trauma

- Multiple contusions and abrasions
- Laceration of the duodenum
- Retroperitoneal hemorrhage, fluid accumulation, and gas formation
- Contusions of the transverse colon
- Peritonitis

Blunt head and neck trauma with multiple contusions, abrasions, and scalp laceration
Blunt extremity trauma with multiple contusions and abrasions
Blunt genitalia trauma

Cause of death duodenal [small bowel] laceration from blunt force trauma to the abdomen
Time of death unknown – many hours before the child was found deceased

Presence of dehydration confirmed at autopsy by vitreous chemistry tests confirming metabolic derangement that developed over time [days in duration]*
Significant weight loss indicating serious dehydration over time [days in duration]

Age of bruises – varying
Age of blunt force trauma to duodenum and pancreas – days with onset of symptoms developing and worsening over time. The fatal abdominal injuries could not have occurred on May 1st.

Age of vaginal trauma – hours not days before death
Pneumonia is present verifying the child's terminal deterioration from the dehydration and blunt abdominal injury. These problems take significant time to develop.

Vitreous chemistries show serious abnormalities*

Sodium:	147 mMOL/L
Potassium:	16.2 mMOL/L
Chloride:	122 mMOL/L
Carbon dioxide:	<5 mMOL/L
Glucose:	24 mg/dl
Urea nitrogen:	29 mg/dl
Creatinine:	0.8 mg/dl

Interpretation of these chemistries shows a pattern of hypernatremic dehydration.
Rachael's weight at autopsy was 12.7 kg, less than weight obtained one year prior (at 2 years 11 months). These findings are consistent with lethal shock and dehydration due to blunt trauma to the abdomen.

The issues in this case represent the typical questions raised from "hidden injuries" to the abdomen of a young child.

Rachael Gray died from a ruptured duodenum with subsequent severe dehydration, shock and eventually peritonitis. In order to understand the unique nature of this injury, it is important to understand the anatomy. INSERT DIAGRAM The area of the bowel, which was injured, in this case involved a segment that lies in a space of the body known as the retroperitoneum. This space actually lies behind the abdominal cavity no in the abdominal cavity. An injury to this area will cause very different signs and symptoms than an injury inside the abdomen. This fact has been discussed in the literature and the problem with delayed diagnosis is a well-established challenge for the doctors who treat these patients. The injury does not leak or bleed immediately into the abdominal cavity. For this reason the typical symptoms observed with an injury leaks blood into the abdomen will not develop until much later. When the blow impacts the wall of the duodenum, the tissue is squeezed between the impacting object and the vertebral bones. This pinching can do two separate things: 1] make a partial or full thickness tear of the wall and 2] cause bleeding into the wall. The latter is important because the blood will cause impairment of normal circulation to the tissue and later result in deterioration [known as necrosis] and eventually perforation of the wall. That is what occurred here. Dr. Howard describes these changes in his autopsy and I confirmed these changes in the autopsy slides provided for my review. The wall of the duodenum has obviously deteriorated over time until the wall had lost its integrity. Even when the duodenum is no longer intact, the blood and contents will not immediately enter the abdominal cavity. It is the irritation of the peritoneal lining inside the abdomen that causes the typical symptoms seen from blood or inflammation within he abdominal cavity such aa is seen with appendicitis. This lack of obvious symptoms can be very misleading, often resulting in delay in diagnosis. These children can be up and around, able to walk, talk and most importantly drink. As they get sicker they will get progressively thirstier until they will appear obsessed with fluids. What is also characteristic of this phase is the decrease and eventual loss of appetite. It is my opinion that in the little girl was in the later stages of her deterioration in the early morning hours of May 2nd and would not have been hungry…only very thirsty. As the child becomes weaker they are unable to drink enough fluid to keep up, breathing will become shallower and pneumonia can develop. That occurred in this case. Until the shock is irreversible the child will remain conscious. The symptoms may appear to wax and wane until the child slips into coma. For this reason the diagnosis may be delayed for 4-5 days. The initial symptoms will be related to the pain of the impact from which the child may recover within a few hours. Over time the body will react to the injury with inflammation, increasing symptoms of vomiting if the duodenum injury prevents normal gastric emptying or obstruction and then secondary symptoms of vomiting and dehydration will set in. Eventually it is the secondary symptoms with eventual shock that is fatal. In investigating these cases it is imperative to distinguish an acute injury that cause deterioration and death within just a few minutes to hours from the delayed onset of shock and dehydration which may not result in collapse or death for days. If the injury is interpreted as fresh, the investigation can be misled or misguided into the wrong timeline. What is important in this case is the need to assemble the medical evidence with attention to the actual clinical progression associated with injuries of this nature. There is no question that this child died from blunt force trauma to her abdomen. The circumstances are very suspicious for inflicted trauma. What has not been understood is what the medical evidence tells us about when this ultimately fatal injury took place. These in juries can occur accidentally as well as part of an abuse spectrum. What

can be stated with certainty is that the jury was not made aware of these critical factors when they were deciding the guilt or innocence of Mr. Jones.
Abdominal trauma is not an uncommon cause of death in victims of abuse in children of this age. Crushing injury from a blow or stomp to the upper abdomen will trap vital organs between the inflicting force and the spinal column. If there is no severe hemorrhage associated with the damage, the diagnosis may be delayed for days. This has repeatedly been published in the literature. It is not uncommon for these children to be up walking and talking until their vital functions begin to fail just before the fatal collapse. This was clearly confirmed by multiple witnesses in this case.

Rachael Gray died at the Desert Vista Trailer park some time after midnight and many hours before her mother found her at 0600 on May 2nd 1994. Her body temperature was recorded as 92 degrees Fahrenheit, and livor mortis and rigor mortis was already present when she arrived at the Kino Community Hospital Emergency Department.

Post mortem examination of vitreous chemistries obtained at the Forensic Science Center showed a diagnostic pattern of dehydration. There is evidence of pre-renal azotemia (increased BUN and Creatinine) with hypernatremia [elevated sodium]. Her post mortem weight is significantly decreased consistent with dehydration as indicated by the abnormal chemistries. In my opinion this also indicates that the injury that had to be present greater than 24 to 48 hours.
It is my opinion to a reasonable degree of medical certainty that the injuries to the vaginal area and to the abdomen were separated by a significant time span, perhaps days. The report that Rachael looked ill on Friday, April 29th is consistent with the abdominal injury being inflicted prior to that time.

Rachael Gray showed a pattern of slowed growth and physical evidence of multiple bruises consistent with a diagnosis of a chronically abused child. Rachael lived in a dangerous environment and the risk of physical and sexual violence was high.

It is my opinion to a reasonable degree of medical certainty that the laceration on Rachael's scalp is most consistent with a simple fall against a hard surface. Blows from an unyielding or moving (to the head) object such as a strike from a crow bar would have inflicted an entirely different injury. Scalp trauma can result in significant bleeding even from a small injury. It is my opinion that this laceration did not contribute to her death. If she was carried while bleeding or transport in a vehicle (while bleeding) it would be expected to find her blood on clothing and in the van.

In cases of fatal abdominal trauma the question is rarely what killed the child but more often when and who inflicted the blow or blows. It is my opinion that the statements and investigative reports in this case do not reasonably identify the specific time and in whose hands this child suffered her fatal injury.

The presence of genital trauma without evidence of ejaculate leaves only the conclusion that the child suffered acute injuries, most probably penetrating, shortly before her death. The pattern injury itself does not identify the gender of the perpetrator. Sexual violence against children can occur at the hands of men and women, including mothers.

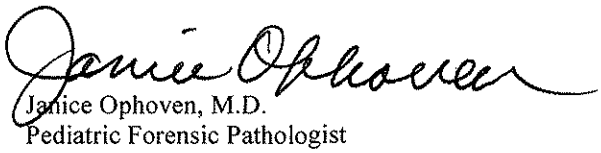
It is my opinion that Dr. Howard suggested to the jury that the time or age of the bruises on her body of the injuries could be interpreted from the photographs. Interpreting the age of bruises from physical appearance and color is recognized by the forensic community to be very inexact and should not be done. This kind of interpretation is not considered standard practice in the specialty.

In the hours before Rachael, Angela and Barry went to bed, it would have been evident to anyone with Rachael that she was in need of immediate medical attention. It is my opinion that the failure to obtain medical care is consistent with fatal neglect.

Rachael Gray's short life ended following multiple episodes of inflicted injury. In my opinion her diagnosis is best classified as death due to blunt abdominal trauma associated with battered child syndrome. The time of the fatal abdominal injury is days not hours before her death.

If you have any additional questions, or should you need additional information, please do not hesitate to contact me.

Sincerely,



Janice Ophoven, M.D.
Pediatric Forensic Pathologist

Exhibit 7

6494 Crackleberry Trail
Woodbury, MN 55129
651.458.0541
Fax 651.768.0994
ophoven@usinternet.com

Janice J. Ophoven, M.D.

February 1, 2010

Ms. Sylvia Lett
Federal Public Defender District of Arizona
Capital Habeas Unit
407 W. Congress, Suite 501
Tucson, AZ 85701-1716
Fax 520-622-6844

Re: Barry Lee Jones

Ms. Lett,

This document is intended to be a visual supplement to the opinion materials I have submitted to date. I have attached copies of prior communications dating from 2002. I will not repeat the details of my findings, which are catalogued in the previous documents. This submission is intended to demonstrate the physical evidence in the case. I additionally requested special stains on the anogenital tissue from Rachael's autopsy. The trichrome stain shows clear evidence of vital reaction with deposits of collagen containing tissue and neovascularization in the wall of the vagina. This indicates substantial healing and is not consistent with a fresh penetrating injury. The age of the injury cannot be precisely determined but the injury did not occur in the few days prior to her death.

The following are the summary conclusions that I provided in my April 2009 report.

> Rachael Gray died at the Desert Vista Trailer park some time after midnight and many hours before her mother found her at 0600 on May 2nd 1994. Her body temperature was recorded as 92 degrees Fahrenheit, and livor mortis and rigor mortis was already present when she arrived at the Kino Community Hospital Emergency Department.
>
> Post mortem examination of vitreous chemistries obtained at the Forensic Science Center showed a diagnostic pattern of dehydration. There is evidence of pre-renal azotemia (increased BUN and Creatinine) with hypernatremia [elevated sodium]. Her post mortem weight is significantly decreased consistent with dehydration as indicated by the abnormal chemistries. In my opinion this also indicates that the injury that had to be present greater than 24 to 48 hours.
> The report that Rachael looked ill on Saturday, April 30th, is consistent with the abdominal injury being inflicted prior to that time.
>
> Rachael Gray showed a pattern of slowed growth and physical evidence of multiple bruises consistent with a diagnosis of a chronically abused child. Rachael lived in a dangerous environment and the risk of physical and sexual violence was high.
>
> It is my opinion to a reasonable degree of medical certainty that the laceration on Rachael's scalp is most consistent with a simple fall against a hard surface. Blows from an unyielding or moving (to the head) object such as a strike from a crow bar would have inflicted an entirely different injury. Scalp trauma can result in significant bleeding even from a small injury. It is my opinion that this laceration did not contribute to her death. If she was carried while bleeding or transport in a vehicle (while bleeding) it would be expected to find her blood on clothing and in the van.

In cases of fatal abdominal trauma the question is rarely what killed the child but more often when and who inflicted the blow or blows. It is my opinion that the statements and investigative reports in this case do not reasonably identify the specific time and in whose hands this child suffered her fatal injury.

The presence of genital trauma without evidence of ejaculate leaves only the conclusion that the child suffered acute injuries, most probably penetrating some time [days or perhaps longer] before her death. The pattern injury itself does not identify the gender of the perpetrator. Sexual violence against children can occur at the hands of men and women, including mothers.

It is my opinion that Dr. Howard suggested to the jury that the time or age of the bruises on her body of the injuries could be interpreted from the photographs. Interpreting the age of bruises from physical appearance and color is recognized by the forensic community to be very inexact and should not be done. This kind of interpretation is not considered standard practice in the specialty.

In the evening hours before Rachael, Angela and Barry went to bed, it would have been evident to anyone with Rachael that she was in need of medical attention. It is my opinion to a reasonable degree of medical certainty that Rachael would not have been hungry in the terminal stages of her deterioration.

Rachael Gray's short life ended following multiple episodes of inflicted injury. In my opinion her diagnosis is best classified as death due to blunt abdominal trauma associated with battered child syndrome. The time of the fatal abdominal injury is days not hours before her death.

Many opinions were provided to the court and the jury but it is my opinion that the **key findings** in this case of abdominal trauma of many days duration were not made clear. The evidence shows that the fatal injuries to Rachael Gray **could not possibly have been inflicted on the day prior to her death** as suggested by the State at Mr. Jones trial. The veracity of this evidence is as scientifically precise as any forensic determination available in medical science.

The attached photographic atlas consists of documented evidence taken at the time of the post mortem. The photomicrographs are digital photographs taken from the original autopsy materials obtained by Dr. Howard. An assumption was made at the original trial that the injuries occurred at the hands of the defendant on May 1st, 1994. The abdominal injuries absolutely could not have occurred on that date. The medical literature has for many years indicated that injuries in the exact location of Rachael can be and often are occult, in other words, persons around the individual will not interpret the symptomology as serious until days after the injury. The individual can walk, talk, drink, and interact until the final stages of deterioration set in. The severe symptomology only will appear in a case such as this when the inflammation breaks through from the retroperitoneal space into the abdominal cavity causing peritonitis and terminal shock. The history verifies the progression of this condition as would be expected for a retroperitoneal injury around a duodenal tear. This information was not provided to the jury and incorrect assumptions about the child could or could not have done were provided to the jury that are inconsistent with the medical evidence.

There is no question that the child suffered injuries at the hands of another or others. The evidence indicates that incorrect theories were presented to the jury that left little doubt as to the defendant's guilt. This evidence is absolutely incorrect and if a review of the findings were authorized today, it is my opinion that there would be no disagreement among knowledgeable forensic pathologists that the injuries were days old.

Rachael was dehydrated – this takes time
Rachael had signs and symptoms of intraabdominal pathology in the days that preceded May 1st
Rachael had signs and symptoms of a worsening intraabdominal crisis in the hours before her death heralding the spread of infection into her abdomen.
Rachael had evidence of duodenal trauma and inflammation in the retroperitoneum that ultimately spread into her abdominal cavity with probable shock and septicemia– this takes time
She has a simple laceration of her scalp that did not cause her death. This injury is not consistent with a blow from a crowbar.
She has evidence of trauma in the genital region consistent with penetrating sexual injury of indeterminate age. This injury is a disruption or laceration of the tissue. It cannot be determined how or when this injury occurred. This

form of injury is not specific to a male penis and could have been the result of penetrating injury at the hands of either a male or female. What is certain is the injury to the abdomen and injury to her vagina shows evidence of healing.
The child had many bruises to the skin. How and when these bruises appeared cannot be determined at this time. Bruises to the skin can be the result of rough handling / child abuse. Bruises to the skin can be the result of rough play. Bruises can result from bleeding abnormalities [known as disseminated intravascular coagulopathy] that develop during shock and physiological chaos with metabolic acidosis. Some of the marks may be the result of handling the body during her deterioration and attempt at resuscitation. The pathologist cannot rely on witness statements regarding the presence of absence of bruises if those statements may be unreliable. The only contribution the pathologist can make is to document as precisely as possible the nature and distribution of the bruises and marks and when appropriate take tissue samples to determine the age of the injury. It has been well established that visual determination of the age of any bruise is scientifically unreliable.

It is my intention with this material to provide documentation of the extensive evidence currently available to verify the aged nature of Rachael's fatal abdominal injury. With it comes my hope that a case of obvious misrepresentation / misunderstanding of the evidence will not result in the death of a possibly innocent man.

If you have any additional questions, or should you need additional information, please do not hesitate to contact me.

Sincerely,

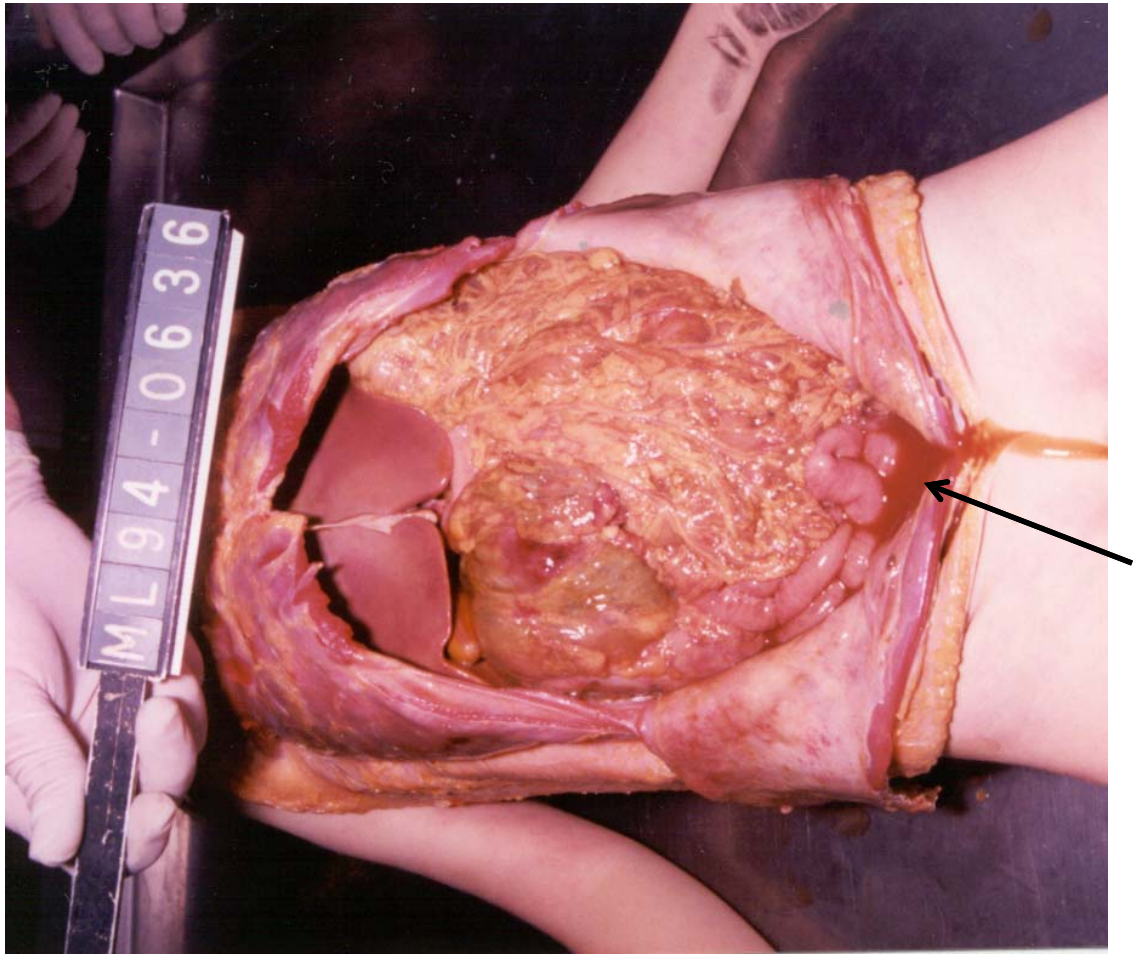
Janice Ophoven, M.D.
Pediatric Forensic Pathologist

Exhibit 8

Jones Autopsy
ML94-0636

Findings prepared by Janice Ophoven MD

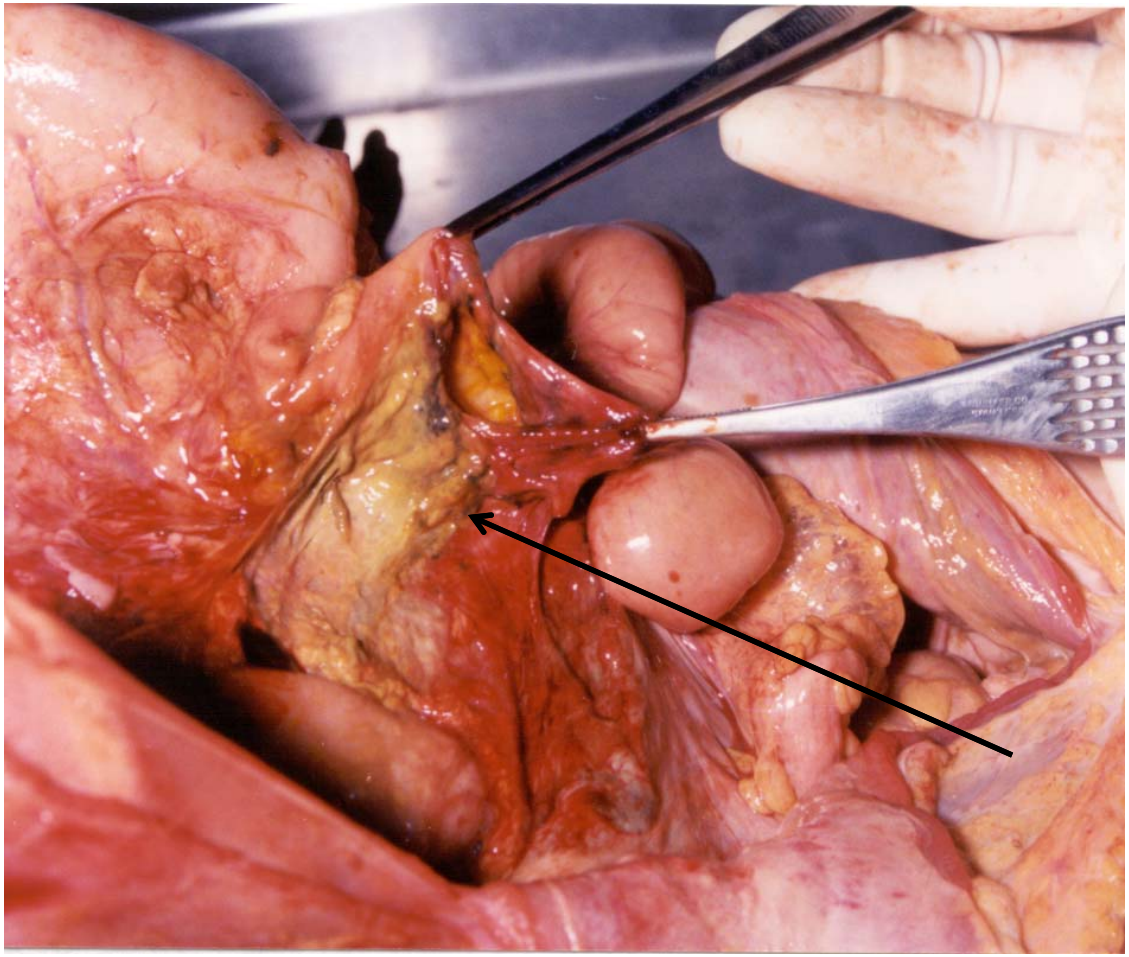
Autopsy Photo 899



Peritonitis

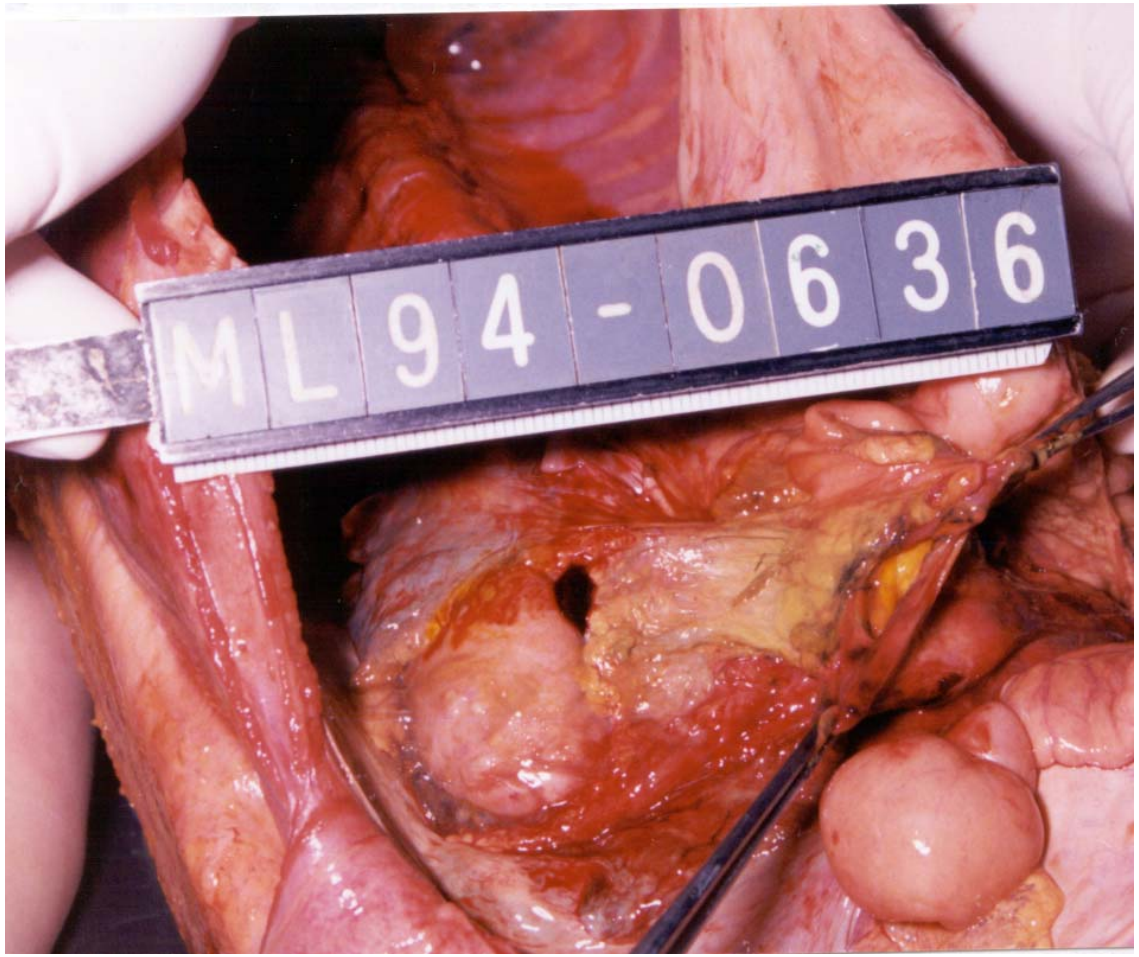
Abdomen shows purulent liquid and discoloration consistent with peritonitis

Autopsy photo 904



Retroperitoneum and
Peritonitis

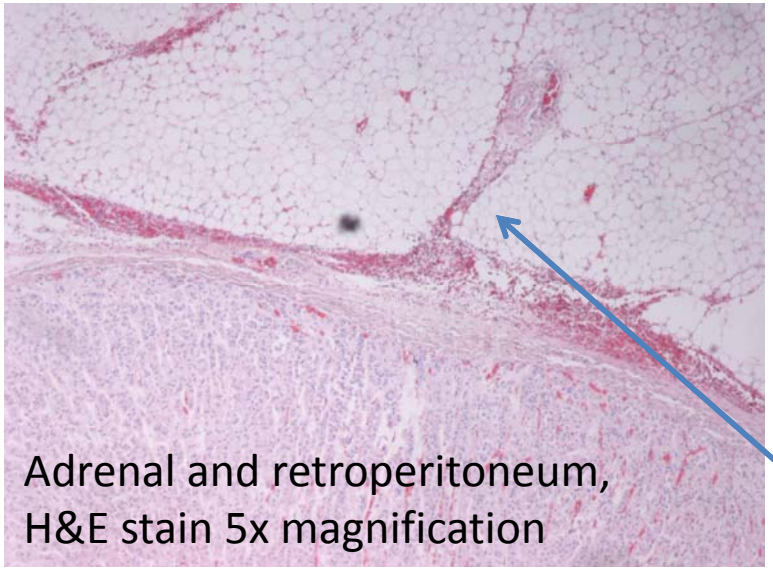
Autopsy Photo 905



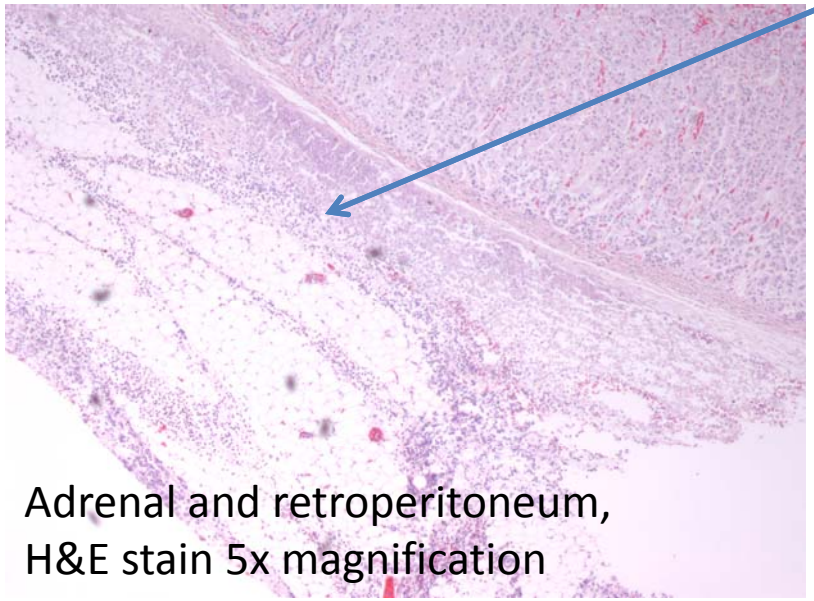
Retroperitoneal area and
Posterior defect

Tissue Including Adrenal and Skeletal Muscle

Histology of the Adrenal Gland



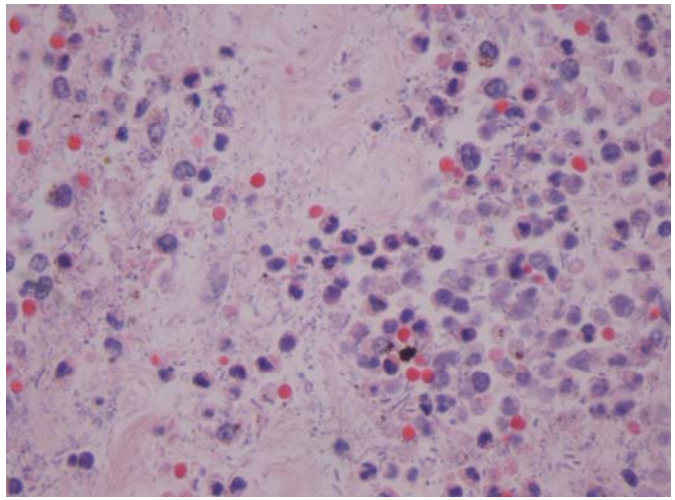
Adrenal and retroperitoneum,
H&E stain 5x magnification



Adrenal and retroperitoneum,
H&E stain 5x magnification

Purulent inflammation of periadrenal fat indicating tissue reaction > 24 hours

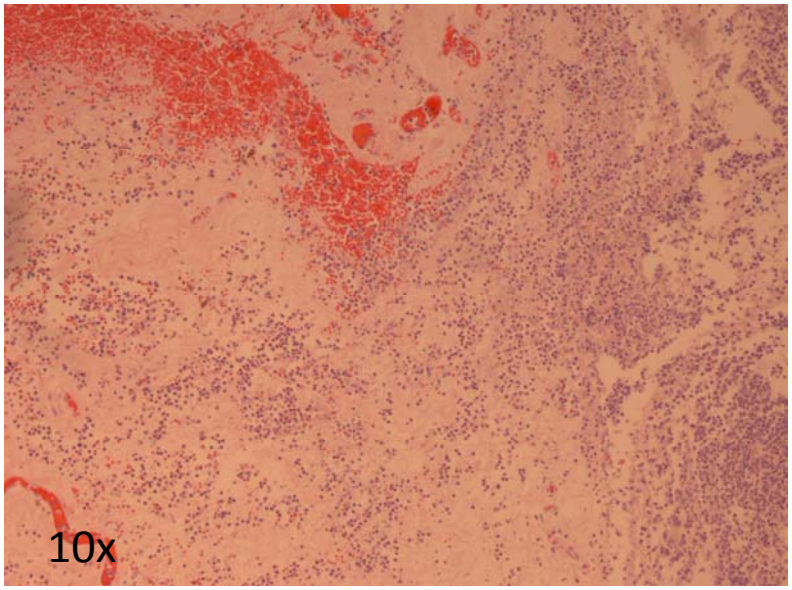
Histology of the Adrenal Gland



Inflammation

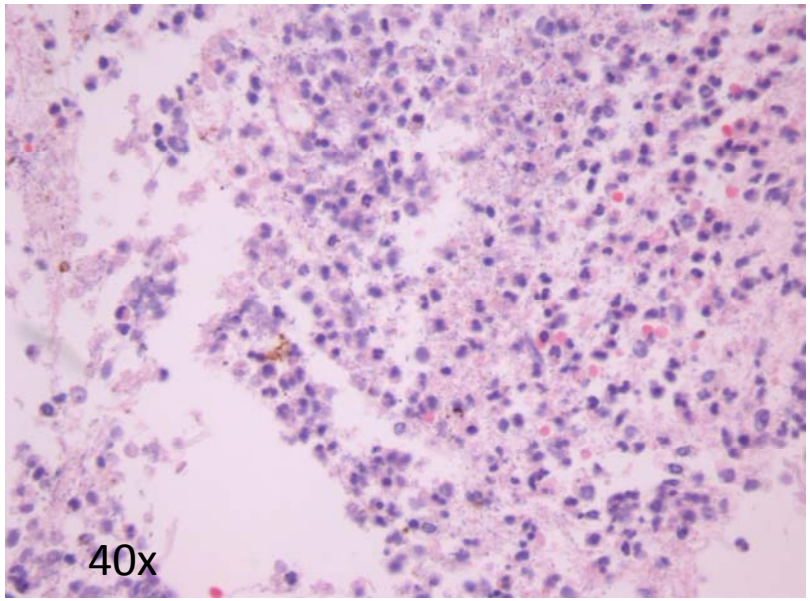
Adrenal and retroperitoneum,
H&E stain 63x magnification

Histology of the Retroperitoneum



Adrenal and retroperitoneum, H&E stain

Slides demonstrate severe inflammation with Dense purulent [pus] infiltrate indicting tissue Reaction > 24 hours.



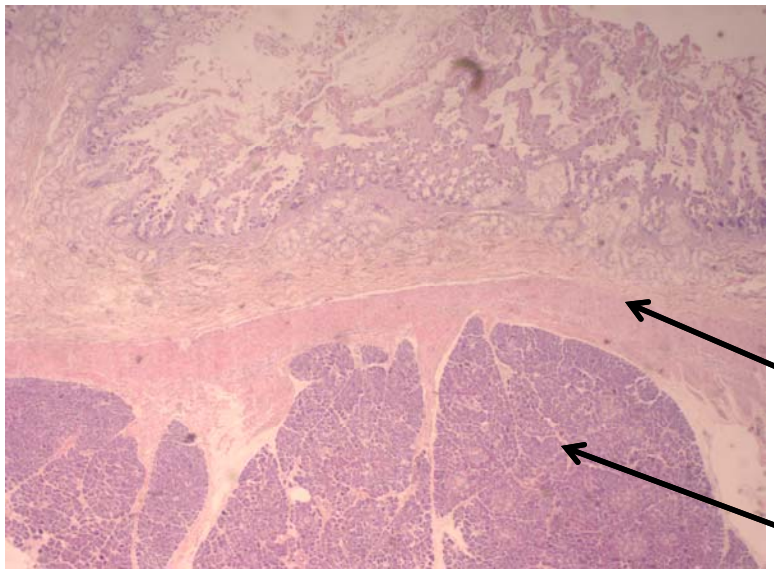
Adrenal and retroperitoneum, H&E stain

Histology of the Pancreas including Duodenum

Pancreas, duodenum, bowel wall,
Scanned image of slide

Disruption with inflammation
In all layers of duodenum

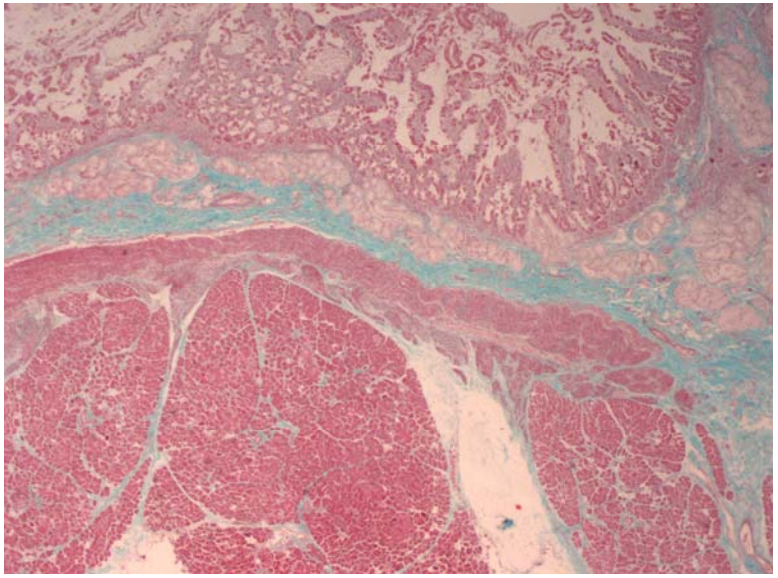
Histology of the Pancreas including Duodenum



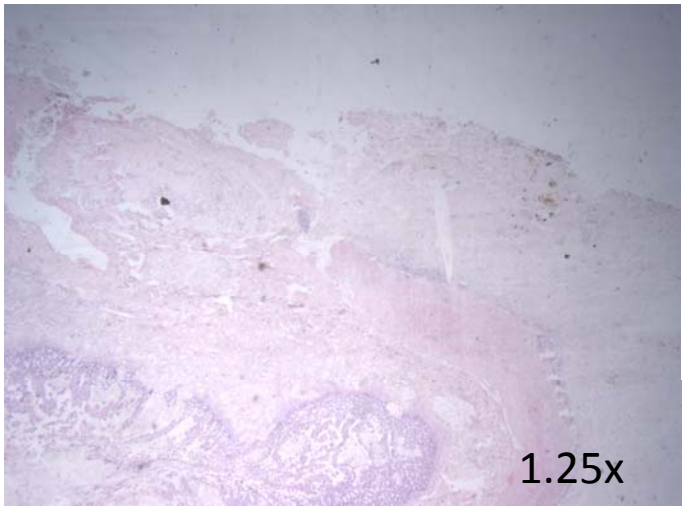
Junction between pancreas and duodenum
H&E and Trichrome stain

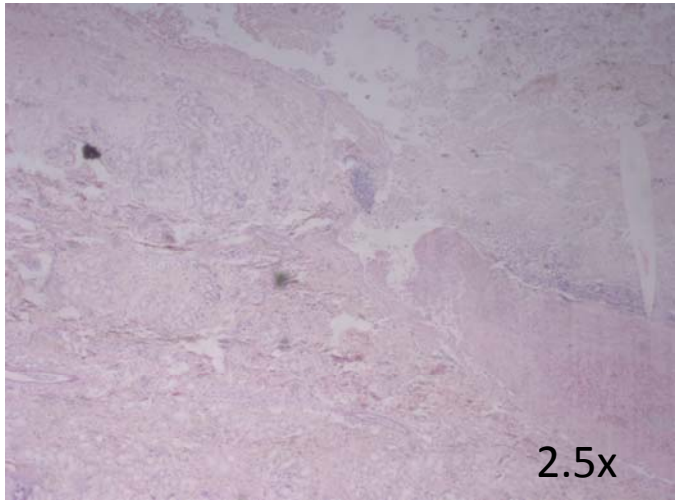
Duodenum muscle wall

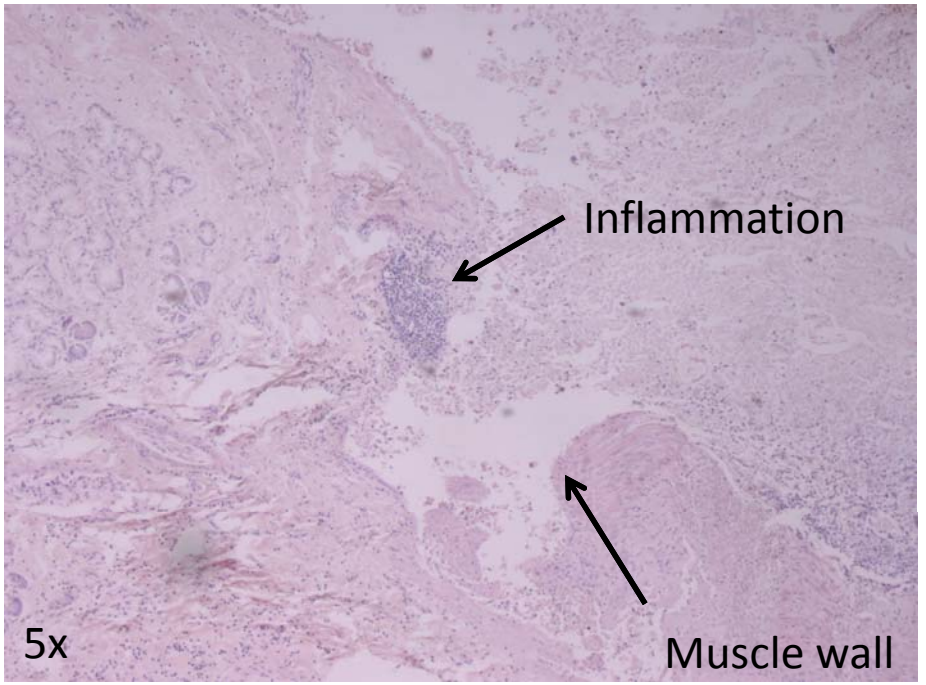
Pancreas



Histology of the Duodenum

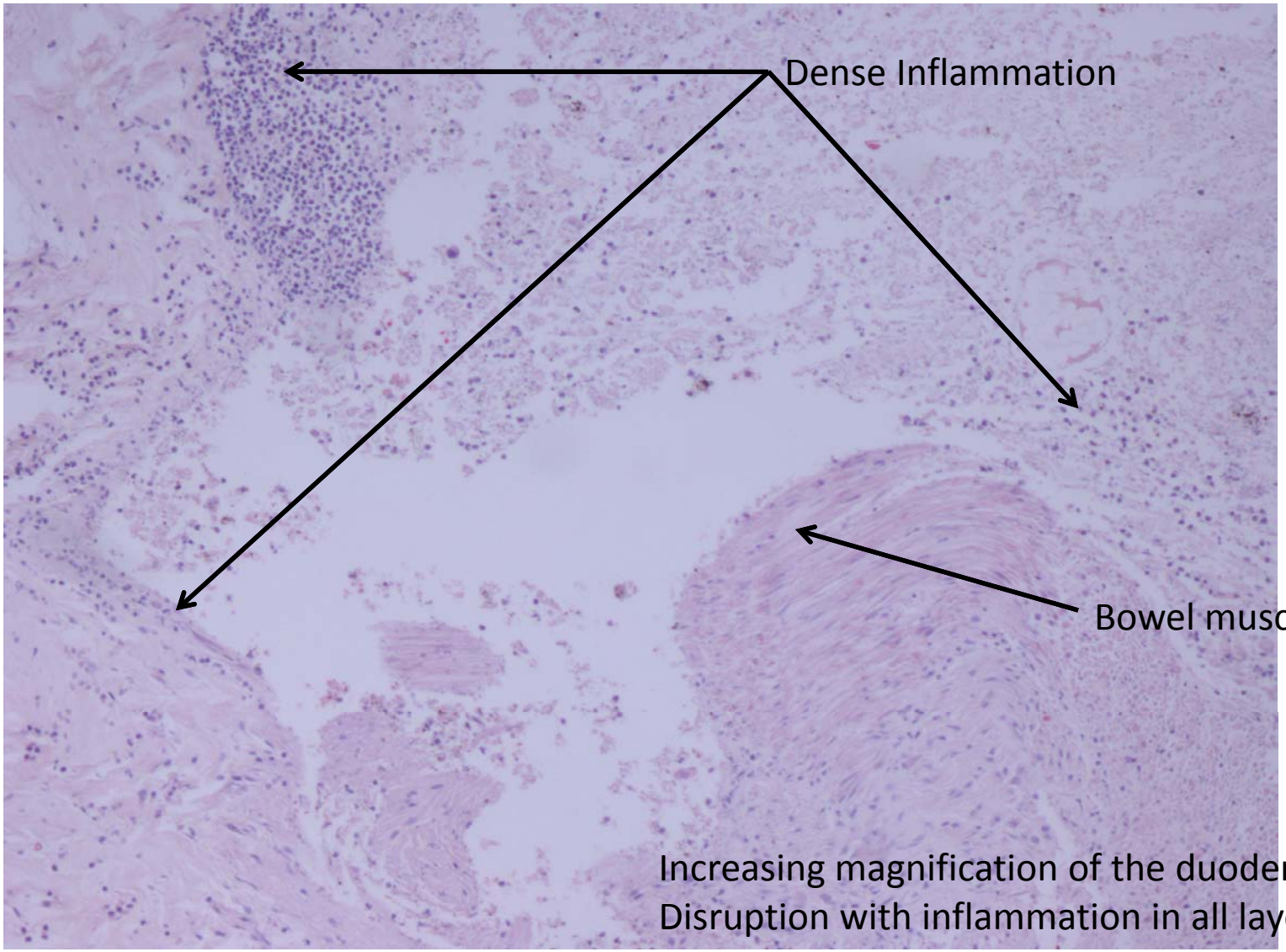




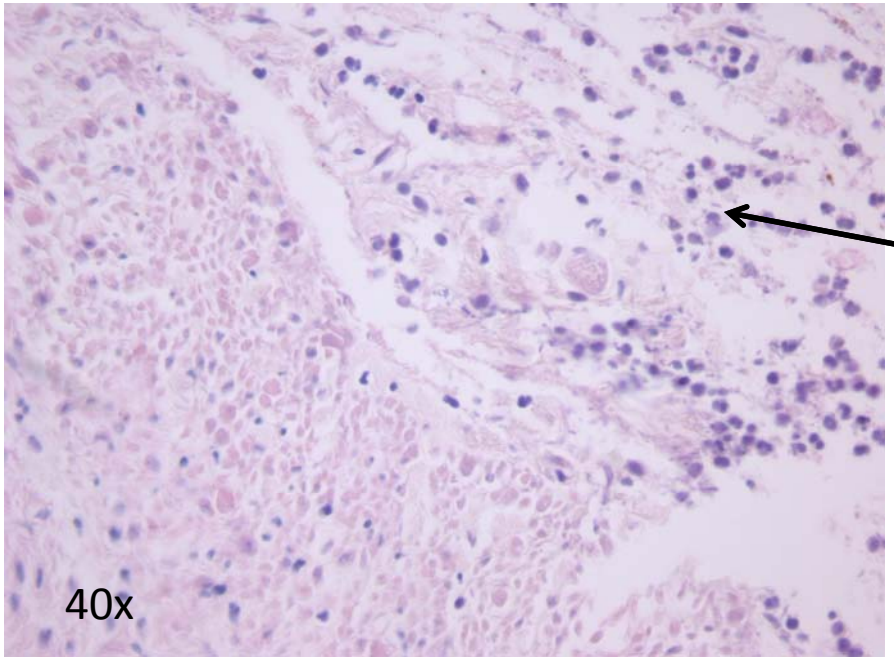


Increasing magnification of the duodenal wall Showing disruption with inflammation in all layers.

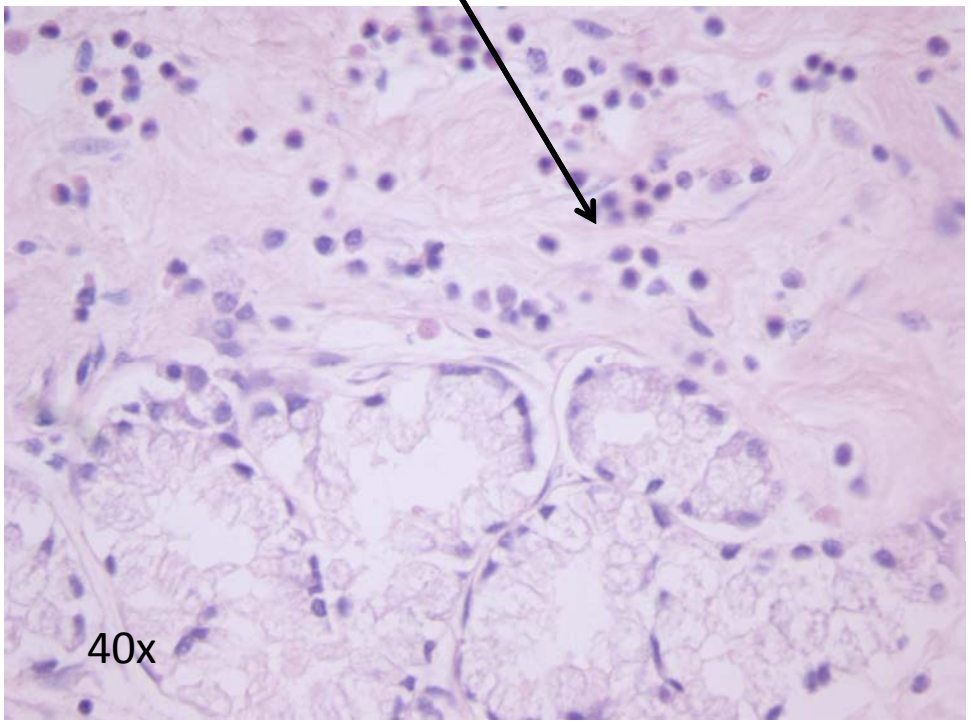
Histology of the Duodenum



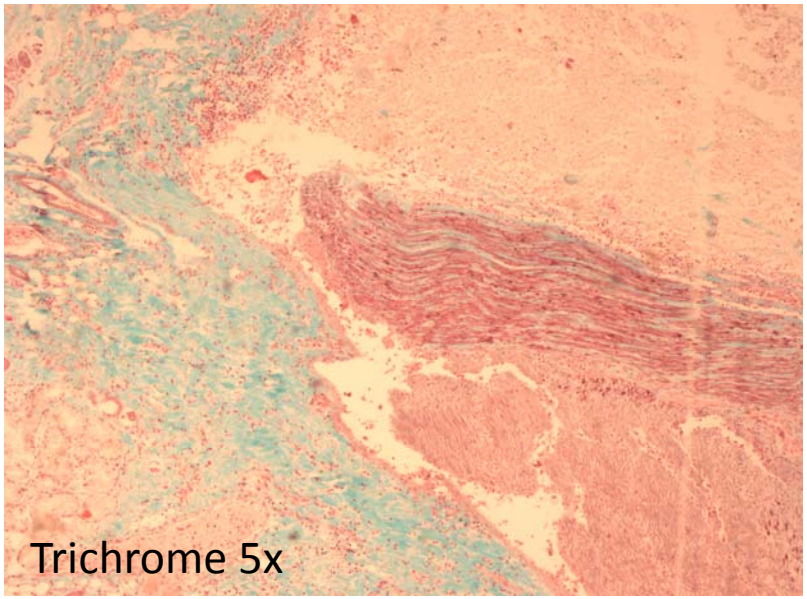
Histology of the Duodenum

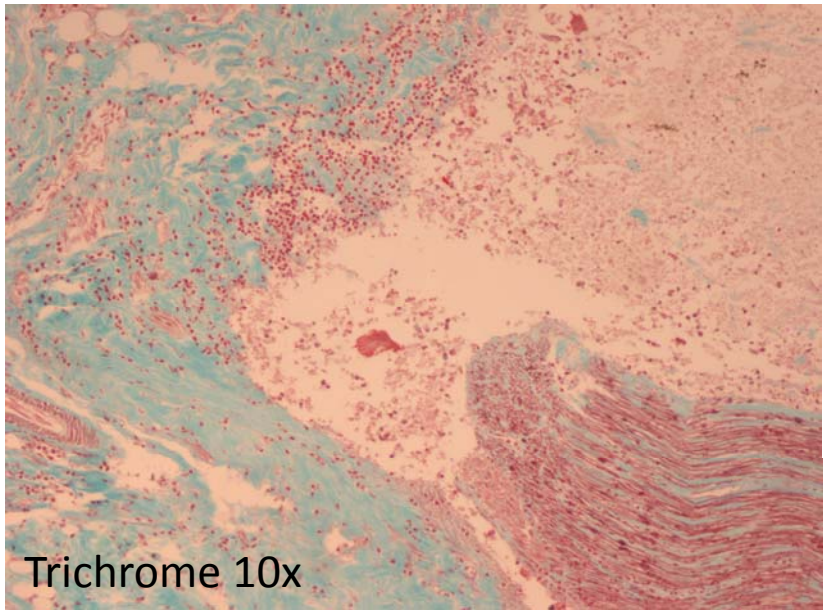


Inflammation

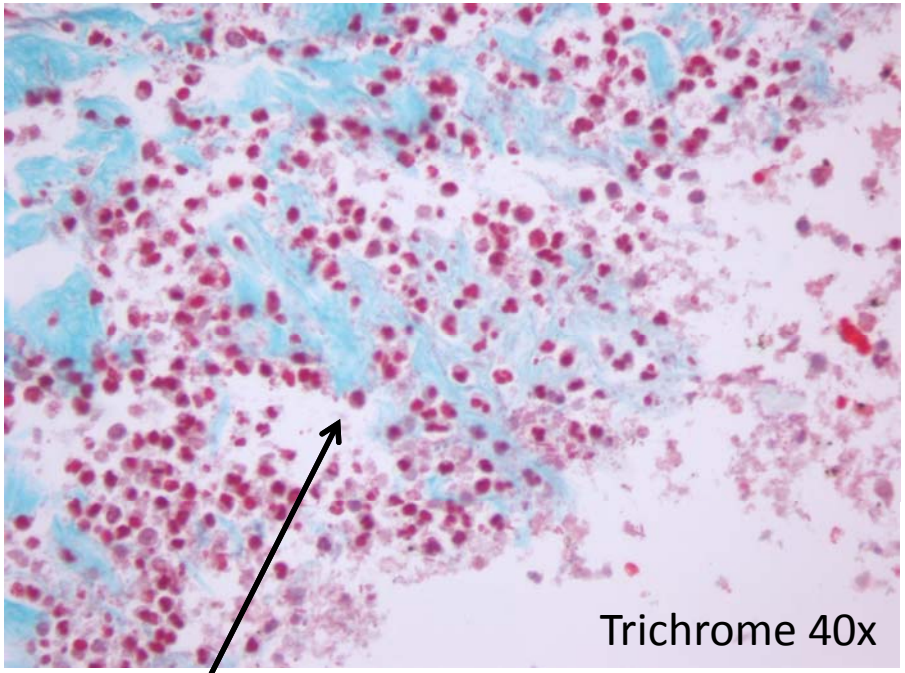


Histology of the Duodenum



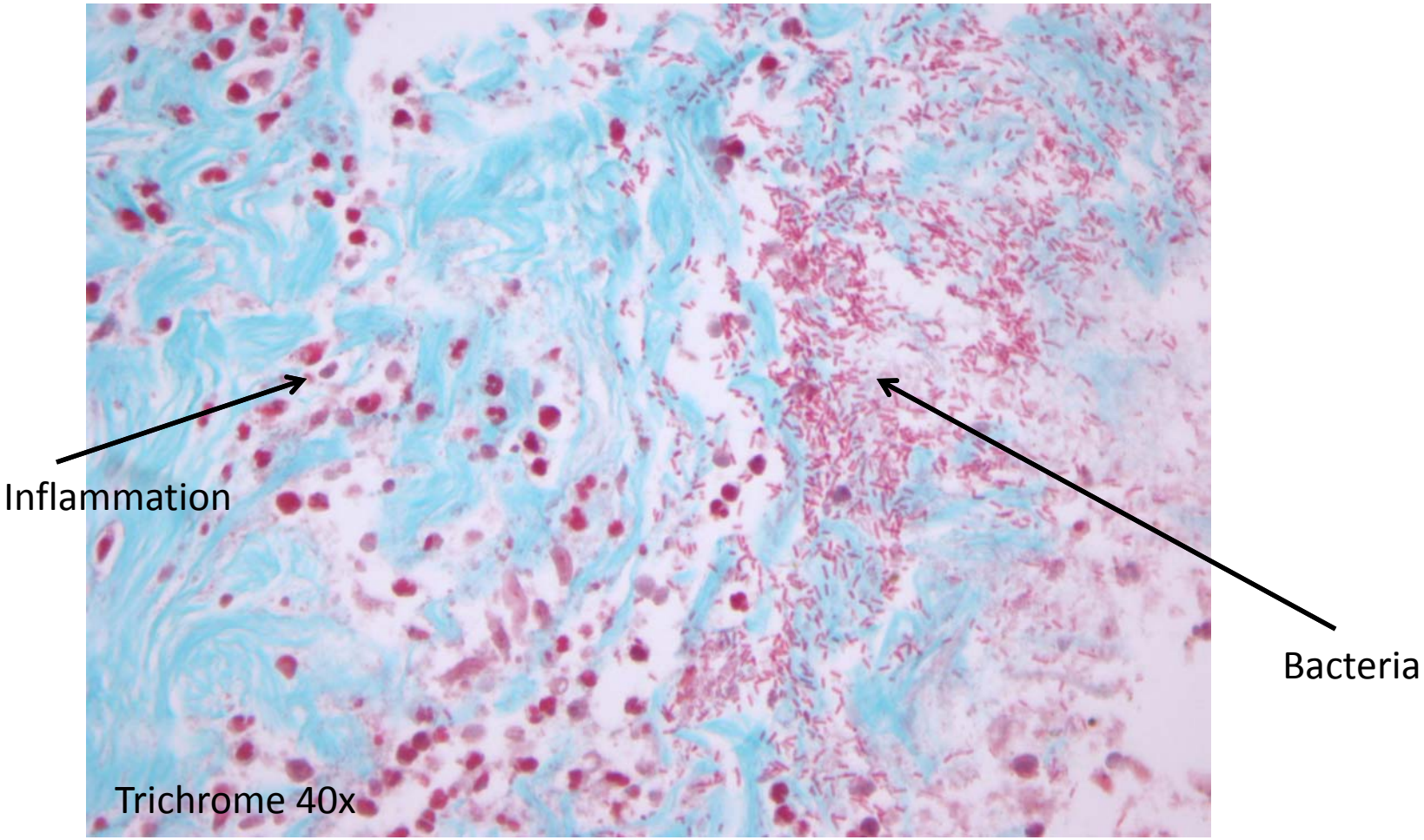


Trichrome [connective tissue stain] with Inflammation and disrupted bowel wall.

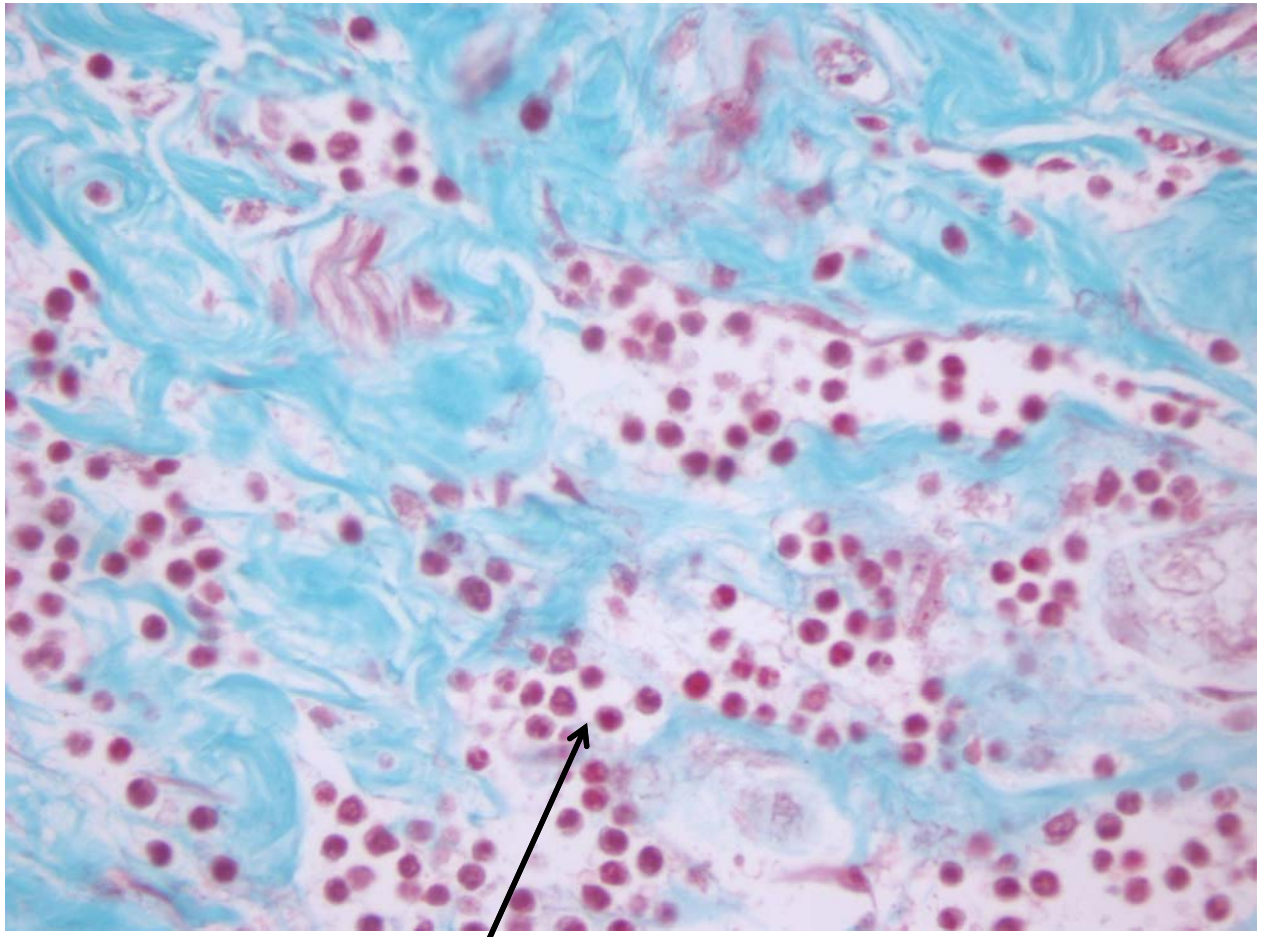


Inflammation

Histology of the Duodenum



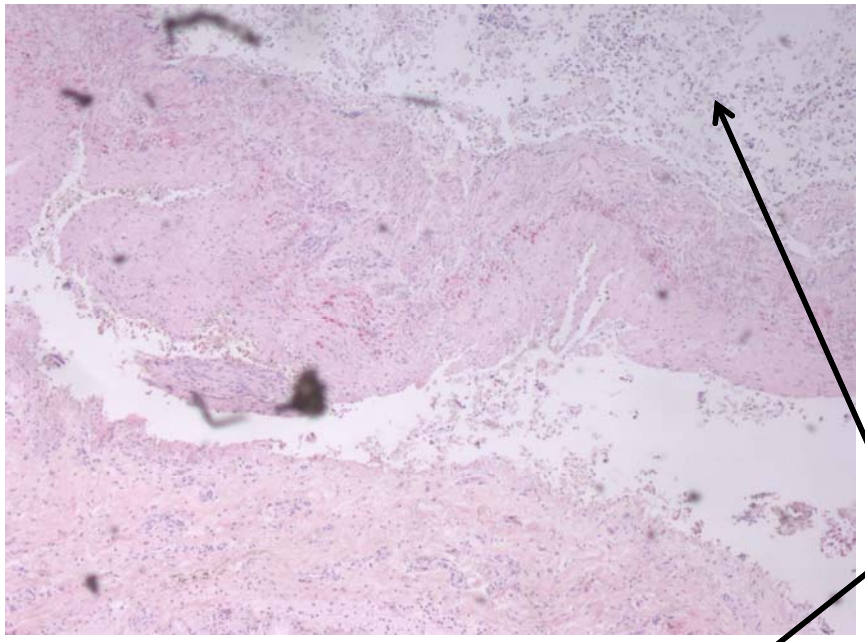
Histology of the Duodenum



Inflammation

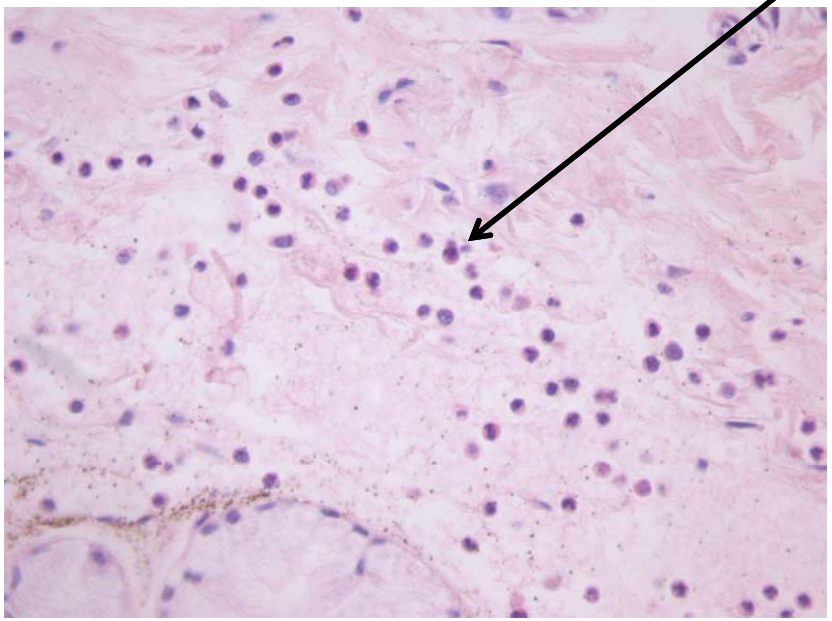
Trichrome 40x

Histology of the Pancreas including Duodenum



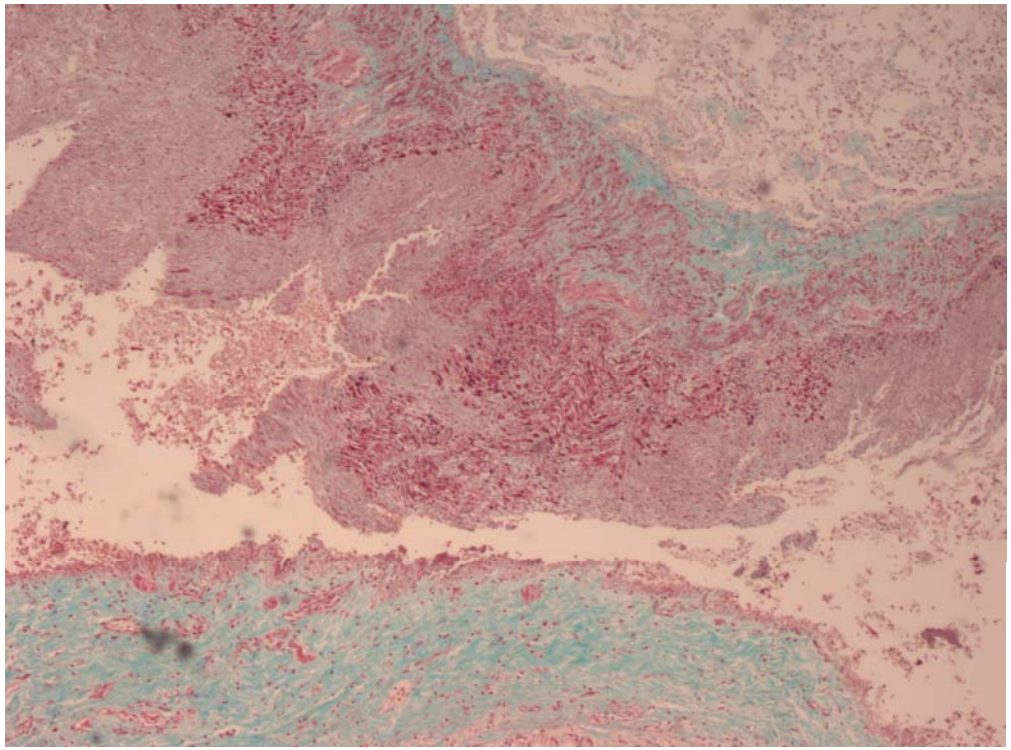
Pancreas, duodenum, bowel wall,
H&E stain 5x magnification

Inflammation



Pancreas, duodenum, bowel wall,
H&E stain 40x magnification

Histology of the Pancreas including Duodenum

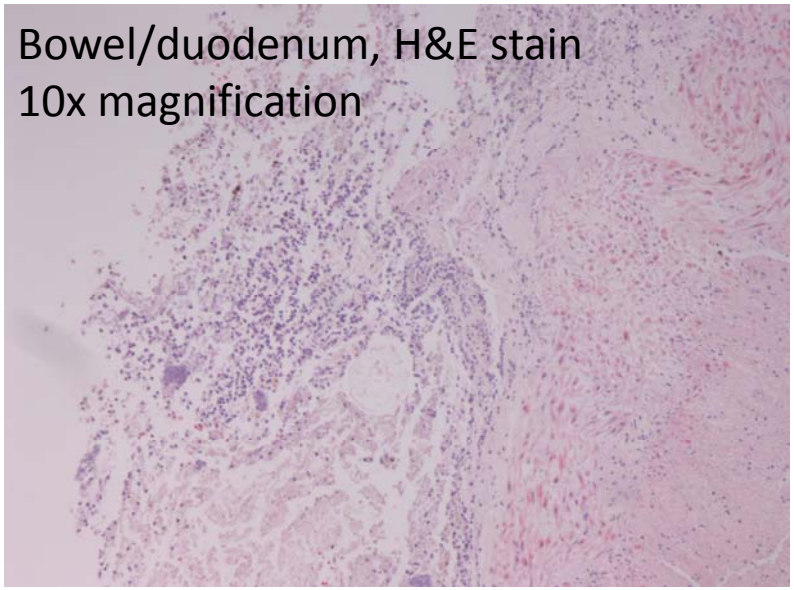


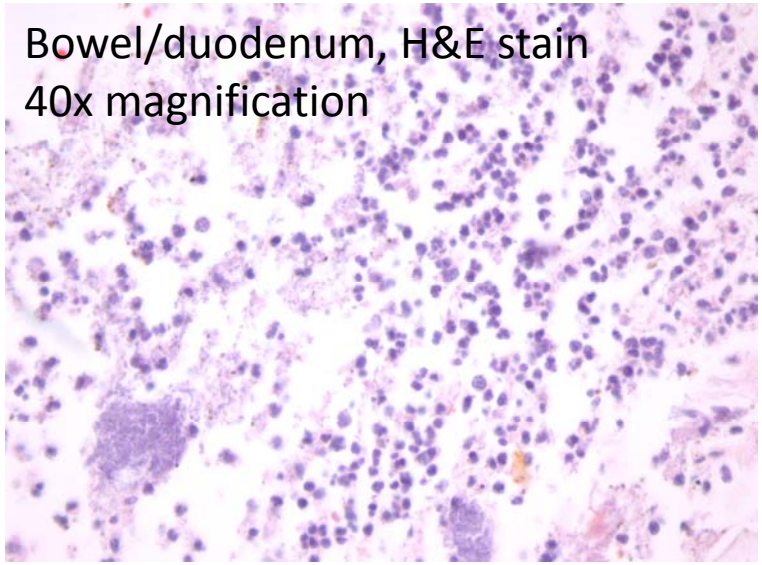
Pancreas, duodenum, bowel wall,
Trichrome stain 40x magnification

Histology of the Bowel

Scanned Slides of Bowel,
H&E and Trichrome

Histology of the Bowel

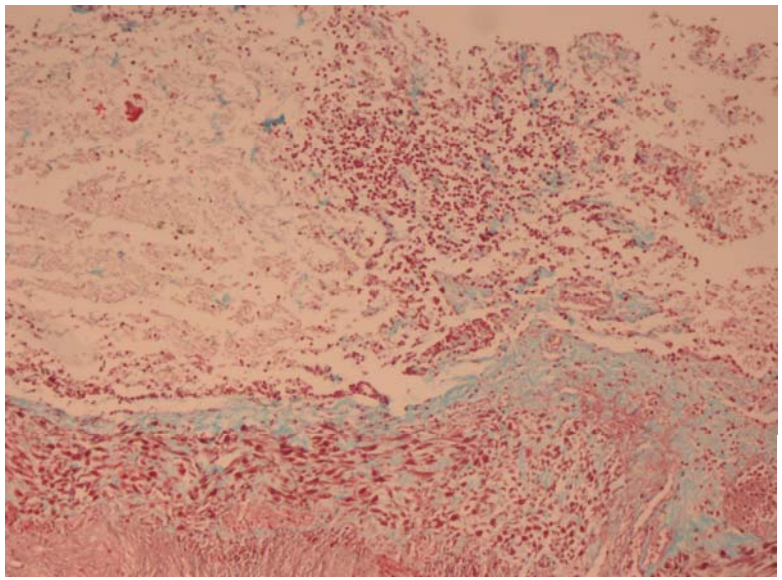




Purulent debris – bacteria, and inflammation
Showing peritonitis

Extension of the process from the
Retroperitoneum to inside the abdomen

Histology of the Bowel



Peritonitis

Bowel/duodenum, Trichrome stain
10x magnification

Exhibit 9

Mary Patricia McKay, M.D., M.P.H.

Office Address: National Transportation Safety Board
Chief Medical Officer
490 L'Enfant Plaza, SW
Washington, DC 20594

E-Mail: mary.mckay@ntsb.gov **Phone:** 202-314-6031

Education:

A. Undergraduate

1982-1986 B.A. Yale University, New Haven, CT
Magna cum laude
Distinction in Major
Master's Award for Contribution to College Life, Berkeley College

B. Graduate

1986-1990 M.D. Columbia College of Physicians and Surgeons, NY, NY
Health Professions Scholarship, United Stated Navy
Alpha Omega Alpha
Admiral John Lyons Award

1999-2002 M.P.H. University of Pittsburgh, Pittsburgh, PA
Best Master's Thesis, Multidisciplinary Master's of Public Health,
Delta Omega National Honor Society

C. Postdoctoral Training

1990-1991 Intern, Basic Surgery (Lieutenant, USNR, Medical Corps)
Naval Hospital San Diego, San Diego, CA
Outstanding Intern, Department of Surgery

1995-1998 Resident, Emergency Medicine
The George Washington University Medical Center, Washington, DC
Resident Research Award, Emergency Medicine

Employment:

1991-1995 Senior Medical Officer (Lieutenant/Lieutenant Commander USNR, Medical Corps)
Naval Branch Clinic, Ballston Spa, NY
Affiliate of Naval Hospital Groton, Groton, CT
National Defense Medal
Meritorious Unit Commendation

Meritorious Service Medal

1998-1999	Attending Staff, temporary, Emergency Department Central Maine Medical Center, Lewiston, ME
1998	Attending Staff, temporary, Emergency Department Ball Memorial Hospital, Muncie, IN
1998-1999	Senior Registrar, Emergency Medicine Dandenong and District Hospital, Melbourne, AUS
1998-1999	Research Fellow Monash University Accident Research Center, Melbourne, AUS
1998-1999	Staff Physician, Emergency Department Southeastern Private Hospital, Melbourne AUS
1999-2002	Assistant Professor of Emergency Medicine MCP/Hanneman School of Medicine Attending Physician, Emergency Medicine Allegheny General Hospital, Pittsburgh, PA
2002-2004	Instructor/Assistant Professor of Emergency Medicine Harvard Medical School Attending Physician, Emergency Medicine Brigham and Women's Hospital, Boston, MA
2004-2010	Associate Professor of Emergency Physician and Public Health The George Washington University Attending Physician, Emergency Medicine The George Washington University Hospital, Washington, DC
2004-2009	Attending Physician, Emergency Medicine Prince George Hospital, Cheverly, MD
2008- 2010	Attending Emergency Physician Veterans' Administration Hospital, Washington, DC
2009-2011	Medical Director Emergency Medicine Training Center Medical Faculty Associates, Washington, DC
2010-2012	Professor of Emergency Physician and Public Health The George Washington University Attending Physician, Emergency Medicine The George Washington University Hospital, Washington, DC
2012-	Adjunct Professor, Emergency Medicine

The George Washington University

2012- Chief Medical Officer
National Transportation Safety Board

2013- Attending Physician, Emergency Medicine
Alexandria Springfield Emergency Physicians
INOVA Alexandria Hospital

Professional Registrations, Licensure, and Certification:

1984- Certification, Basic Life Support
1989- Certification, Advanced Cardiac Life Support
1991- Certification, Advanced Trauma Life Support
1991-1996 Medical License, New York
1992-1995 Certification, Radiation Safety Officer, US Navy
1992-1995 Instructor, Pediatric Advance Life Support
1992-2004 Certification, Pediatric Advanced Life Support
1995-1999 Medical License, Virginia
1998-1999 Medical Registration, Victoria, Australia (temporary)
1998 Medical License, Indiana (temporary)
1998-1999 Medical License, Maine (temporary)
1999 Diplomate, American Board of Emergency Medicine
1999-2003 Medical License, Pennsylvania
1999- Board Certification, American Board of Emergency Physicians
2002-2004 Medical License, Massachusetts
2002- Fellow, American College of Emergency Physicians
2004 - Medical License, Maryland
2004- Medical License, District of Columbia
2008 Recertification, American Board of Emergency Physicians

Societies and Honors

Memberships:

1995- American College of Emergency Physicians (ACEP)
1995- Society for Academic Emergency Medicine (SAEM)
1995-1998 Emergency Medicine Residents Association (EMRA)
1999- Association for the Advancement of Automotive Medicine (AAAM)
1999-2002 Pennsylvania Chapter, American College of Emergency Physicians
2000- American Public Health Association (APHA)
2002-2004 Massachusetts Chapter, American College of Emergency Physicians (MACEP)
2003 - Cochrane Injuries Group
2004- Society of Automotive Engineers (SAE)
2004- District of Columbia Chapter, American College of Emergency Physicians
2005- American Trauma Society (ATS)
2006 - Society for the Advancement of Violence and Injury Research (SAVIR)

Peer Review/Editorial Boards:

1998-	Peer Reviewer	Annals of Emergency Medicine
2001-	Peer Reviewer	Academic Emergency Medicine
2004 - 2011	Section Editor, NHTSA notes	Annals of Emergency Medicine
2006 -	Peer reviewer	American Journal of Preventive Medicine
2007 - 2011	Department Head, NHTSA notes	Annals of Emergency Medicine
2008-	Editorial Board Member	Traffic Injury Prevention
2011 -	Peer Reviewer	Academic Pediatrics

Leadership positions:

2000- 2004	Ethics Committee, Member, Society for Academic Emergency Medicine
2001-2003	Injury Prevention and Control Section, Chair Elect, American College of Emergency Physicians
2002-2004	Public Health Committee, Massachusetts College of Emergency Physicians
2002- 2005	Trauma and Injury Prevention Section, Chair, American College of Emergency Physicians
2003 - 2004	Trauma and Injury Control Committee, member, American College of Emergency Physicians
2003 -	Membership Committee, member, Association for the Advancement of Automotive Medicine
2004-2013	Board of Directors, Association for the Advancement of Automotive Medicine
2004-2007	Trauma and Injury Control Committee, Chair, American College of Emergency Physicians
2004-2007	EMS Committee, Liaison, American College of Emergency Physicians
2006-2007	Public Policy Committee, Society for the Advancement of Violence and Injury Research
2006-2009	Report Card Task Force, American College of Emergency Physicians
2006-2013	Executive Committee, Association for the Advancement of Automotive Medicine
2008-2012	Policy Committee, Chair, Association for the Advancement of Automotive Medicine
2008-2010	Secretary, Association for the Advancement of Automotive Medicine
2010-2012	President-Elect, Association for the Advancement of Automotive Medicine
2012-2013	President, Association for the Advancement of Automotive Medicine

Administrative Duties

2002-2004 Massachusetts Chapter of American College of Emergency Physicians
Representative to SAFE (Seatbelts are for Everyone) Coalition, Massachusetts
April 1, 2003: Legislative testimony to MA Joint Public Safety Committee

2003 Representative from the American College of Emergency Physicians to the inaugural meeting of The Injury Coalition

2004 Official representative for the American College of Emergency Physicians to the Centers for Disease Control planning group for 2005 National Injury Conference

2005-2011 Official representative for the American College of Emergency Physicians to the National Commission Against Drunk Driving (NCADD)

2005 Representative of the American College of Emergency Physicians to the National Trauma-EMS Stakeholders Group – Advisory to HRSA

2006-2012 Advisory Board member representing the American College of Emergency Physicians for the Campaign for Public Health

2010-2012 Official representative for the American College of Emergency Physicians to the Next Generation 911 Working Group

Awards and Honors

2008 Elaine Wodzin Young Achiever Award
Association for the Advancement of Automotive Medicine

University Activities and Administrative Duties

A. Departmental

1995-1998 Resident Committee
The George Washington University Medical Center,

1997-1998 Education Committee, Chair
Department of Emergency Medicine,
The George Washington University

1999-2002 Resident Selection Committee
Department of Emergency Medicine
Allegheny General Hospital

1999-2000 Member, Operations Group
Department of Emergency Medicine
Allegheny General Hospital

2000-2002 Member, Research Group

Department of Emergency Medicine,
Allegheny General Hospital

2008-2012 Member, Research Section
Department of Emergency Medicine
The George Washington University

2009-2012 Chair, Section of Injury and Toxicology
Department of Emergency Medicine
The George Washington University

2009-2012 Recruitment Committee
Department of Emergency Medicine
The George Washington University

2011-2012 Chair, Research Section
Department of Emergency Medicine
The George Washington University

B. Hospital

2000-2002 Ethics Committee, Allegheny General Hospital, Pittsburgh, PA

2002-2004 Ethics Committee, Brigham and Women's Hospital, Boston, MA

2004 Second Call Provider, Ethics Consultation Service
Brigham and Women's Hospital, Boston, MA

2003-2004 Brigham and Women's Hospital Representative to SAFE (Seatbelts are for Everyone) Coalition, Massachusetts

2005 -2012 Trauma Committee, The George Washington University Hospital

2011-2012 Co-Chair, Emergency Department, Trauma Committee, The George Washington University Hospital

C. University

2005-6 Chair Search Committee, Department of Prevention and Community Health, School of Public Health and Health Services, The George Washington University

2008 - 2009 Mental Health Task Force, The George Washington University

2010-2011 Chair Search Committee, Department of Prevention and Community Health, School of Public Health and Health Services, The George Washington University

Educational Achievements

A. Courses Taught

Undergraduate Education

2006 Biological Basis of Disease,
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2007 Public Health and Public Policy
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2009 Public Health
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2010 Biological Basis of Disease,
The George Washington University School of Public Health and Health Services

Guest Lecturer, two hours

2011 Biological Basis of Disease,
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2012 Biological Basis of Disease,
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

Undergraduate Medical Education

1994-1995 Problem-Oriented Learning. SUNY Albany School of Medicine
Preceptor, Pediatric Reactive Airway Disease, 40 hours

1995-1998 Fourth-year clerkship, Emergency Medicine, Georgetown University Medical School
Preceptor, Simulated Patient Encounters, 15 hours

1998 Fourth-Year Didactic Elective: “Telling the News,” The George Washington University School of Medicine
Course developer and lecturer, 30 hours

1998 Fourth year Emergency Medicine Rotation, The George Washington University School of Medicine
Teaching resident, primarily responsible for all didactic teaching. 40 hours

1999-2002 Allegheny General Hospital Emergency Medicine Elective
Role: Lecturer, interactive sessions

MCP/Hahnemann School of Medicine, 60 hours

2003 Injury Epidemiology, Harvard Medical School
Guest Lecturer, two hours

2003 Emergency Medicine Rotation, Harvard Medical School: Orthopedics
Guest Lecturer, one hour

2003 Emergency Medicine Rotation, Harvard Medical School: Hand Injuries
Guest Lecturer, one hour

2003 Emergency Medicine Lecture Series, Harvard Medical School,
Brigham and Women's Hospital: Environmental Emergencies
Guest Lecturer, one hour

2004 Injury Epidemiology,
Harvard Medical School
Guest Lecturer, two hours

2004 Introduction to Clinical Medicine
Harvard Medical School
Preceptor, 40 hours

2005 Domestic Violence
The George Washington University Medical School
Guest Lecturer, two hours

2005 CAP Preceptor
The George Washington University Medical School, 40 hours

2006 Global Health/Emerging Diseases,
The George Washington University Medical Center
Guest Lecturer, two hours

2006 International Emergency Medicine,
The George Washington University Medical Center
Guest Lecturer, two hours

2008 International Emergency Medicine,
The George Washington University Medical Center
Guest Lecturer, two hours

2008-2009 CAP Preceptor
The George Washington University Medical School, 40 hours

2009 Capstone: Practice of Medicine IV
The George Washington University Medical Center
Guest Lecturer, two hours

2009-2010 CAP Preceptor
The George Washington University Medical School, 40 hours

2010-2011 CAP Preceptor
The George Washington University Medical School, 40 hours

Graduate Medical Courses

1999-2002 Emergency Medicine Lecture Series, Allegheny General Hospital
Lectures: Ethics and the Emergency Physician
Pediatric GI Bleeding
Pain
Child Passenger Safety
Pneumonia
Professionalism
Research 101
Arthritis

2011-2012 Trauma Simulation and Trauma Team Work

Graduate Public Health Education

2005 Traffic Injury Prevention: Science, Policy, and Behavior
Guest Lecturer, Injury Research Course
The George Washington University School of Public Health and Health Sciences

2006 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

2006 Public Policy
Guest Lecturer, Gun Violence and the Emergency Physician
The George Washington School of Public Health and Health Sciences

2007 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

2008 Traffic Safety as a Public Health Problem
Course Instructor: 1 Credit Topics course
The George Washington University School of Public Health and Health Sciences

2008 Traffic Injury Prevention: Science, Policy, and Behavior
Guest Lecturer, Injury Research Course
The George Washington University School of Public Health and Health

Sciences

2009 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

2010 Injury among the Elderly
Guest Lecturer, Topics in Geriatrics
The George Washington University School of Public Health and Health Sciences

2010 Traffic Safety as a Public Health Problem
Course Instructor: 1 Credit Topics course
The George Washington University School of Public Health and Health Sciences

2010 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

2011 Traffic Safety – Global issues in Epidemiology
Guest Lecturer, Injury Research Course
The George Washington University School of Public Health and Health Sciences

2011 Injury among the Elderly
Guest Lecturer, Topics in Geriatrics
The George Washington University School of Public Health and Health Sciences

2011 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

2012 Injury Control in the Global Environment
Co-Instructor, one credit topics course
The George Washington University School of Public Health and Health Sciences

Invited Teaching Presentations

2000 Car Seat Safety
Obstetrics and Gynecology Grand Rounds, Allegheny General Hospital

2000	Occupant Safety: Seat Belts and Air Bags University of Pittsburgh and Allegheny General Emergency Medicine Combined Grand Rounds
2000	Car Seat Safety Pediatrics Grand Rounds, Allegheny General Hospital
2000	Occupant Safety: Seat Belts and Air Bags Emergency Medicine Grand Rounds, Georgetown University Medical Center, Washington, DC
2001	Biomechanics of Injury Grand Rounds, The George Washington University Medical Center, Department of Emergency Medicine, Washington, DC
2002	Blunt Injury Biomechanics Critical Care Transport Team Lecture Series
2002	Biomechanics 101 HAEMR Residency Conference Series
2003	Epidemiology of Vehicular Injury HAEMR Residency Conference Series
2003	Advances in Trauma Care HAEMR Residency Conference Series
2003	Biomechanics of Vehicular Injury Emergency Nursing Training Series
2004	Biomechanics of Crash Injury Paramedic Training Series, Boston EMS
2004	Time Critical Resource Allocation Schwartz Rounds, Hospital-wide ethics series Brigham and Women's Hospital
2004	Recent Research Lunch lecture series Boston Medical Center, Department of Emergency Medicine
2006	Biomechanics of Motor Vehicle Injury Trauma Grand Rounds The George Washington University Hospital
2006	Neurological Trauma Emergency Medicine Grand Rounds The George Washington University Hospital

2006	Biomechanics and the Trauma Surgeon Trauma Grand Rounds RW Cowley Shock Trauma Center University of Maryland
2006	Injury Coding Crash Analysis, invited lecturer The George Washington University School of Engineering
2007	Injury Pathophysiology Basic Pathophysiology The George Washington University
2007	Biomechanics and Pedestrian Injury Grand Rounds, Emergency Medicine St. Lukes – Roosevelt Medical Center
2007	Injury Coding Crash Analysis, invited lecturer The George Washington University School of Engineering
2008	Evidence Based Injury Prevention for the Emergency Physician Grand Rounds, Emergency Medicine The George Washington University Hospital
2008	Screening and Brief Intervention for Alcohol Overuse Grand Rounds, Emergency Medicine The George Washington University Hospital
2008	Gang Violence: Effects in the Emergency Department Cook County and University of Chicago Hospitals Combined Emergency Medicine Grand Rounds
2009	Introduction to Research: Framing the research question Combined Emergency Medicine fellowship didactic rounds The George Washington University
2009	Injury Control in Emergency Medicine Visiting Physician Program, Department of Emergency Medicine The George Washington University
2010	Screening and Brief Intervention Emergency Medicine Residency The George Washington University
2010	Clinical Conundrums: When Things are not as they Seem

Emergency Medicine Residency
The George Washington University

2011 Traffic Safety
Emergency Medicine Residency
National Guard Hospital
Riyadh, Kingdom of Saudi Arabia

2011 Trauma Care
Department of Emergency Medicine
Riyadh Military Hospital

Invited Keynotes

2010 Before the Biomechanics Matters
Biannual meeting, ICRASH
Leesburg, VA

Continuing Medical Education

2001 Sonography in the Emergency Department: Practice Guidelines
Emergency Ultrasound Course, Allegheny General Hospital
Pittsburgh, PA

2004 Crash Outcome Analysis for Emergency Medicine Researchers: Using NASS/CDS to Further the State of the Art
Society for Academic Emergency Medicine
Orlando, FL

2004 Biomechanics of Motor Vehicle Injury
Emergency Medicine into the 21st Century
Boston, MA

2006 Neurological Trauma
Evidence-Based Emergency Medicine
Washington, DC

2009 From Pediatrics to Geriatrics: Injury Prevention in Primary Care
DCAPA CME 2009 The PA in Primary Care: A Capital Idea

B. New Courses Developed

2000 TIPS for EMS: Trauma Injury Prevention Seminar for Emergency Medical Systems Professionals. Program aimed at providing local EMS professionals with the skills and data to perform community based injury prevention interventions. Personally developed one-third of the course.

2001 **Didactic Emergency Medicine.** Co-developed this monthly course designed to improve fund of knowledge, clinical decision-making, and test-taking skills of emergency medicine residents.

2004 **Training in Crash Outcomes Analysis.** Developed and produced one-day training course for emergency physicians on using nationally available data from the National Automotive Sampling System to perform epidemiologic studies.

2008 **Topics: Traffic Safety.** 1 credit graduate course. The George Washington University, School of Public Health and Health Services

2009 **Case Studies in Injury Control.** 3 credit undergraduate course. The George Washington University.

2011 **Independent Study in Pediatric Injury Research**. Two credit graduate course. The George Washington University. Jessica Schwartz

2012 **Injury and Global Public Health.** 1 credit graduate course. The George Washington University, School of Public Health and Health Services

C. Student Mentoring

Graduate Student Mentoring

2005-6	The George Washington University School of Public Health and Health Services MPH Special Project, David Roberts, PhD Trends in Elderly Visits to the ED, 1993-2003
2006 -2010	The George Washington University Medical Center Global Health Track, Jean Limpert
2007-2009	The George Washington University School of Public Health and Health Services Practicum and Capstone, Marie White
2006-2007	The George Washington University Medical Center Research Project: Sports Injury Ali Noor
2006-2009	The George Washington University Medical Center Research Project: Gangs in the Emergency Department Mandeep Grawal
2008-2009	The George Washington University Medical Center Research Project: Do ED Patients Know Who Their Doctor IS and Does It Matter to Them? Jonathan Hill (Gill Fellowship recipient) Gladys Kamanga-Sollo

2009-	The George Washington University Medical Center Research Project: ED Mode of Arrival Sarah Pai (Gill Fellowship recipient)
2008-2010	The George Washington University School of Public Health and Health Services Culminating Experience, Rafael Marshall
2010-2011	The George Washington University Medical Center Research Project: Downhill Biking Injuries at Whistler Zachary Ashwell (Gill Fellowship recipient)
2011	Summer shadowing program: Joey Tu
2012	The George Washington University School of Public Health and Health Services Practicum and culminating experience: Meaghan A. Smith
2012	The George Washington University Medical Center Research Project: Cellphones and Driving; Can we Intervene? Alexander Fortenko (Gill Fellowship recipient)

Resident Mentoring

2007	Elizabeth Schoenfeld, MD Statewide Emergency Department Visits in Nebraska: Weekends are different than weekdays
2008	Jana Baker, MD Epidemiology of EMS runs in Shenandoah National Park
2006-2009	Annette Dorfman, MD
2009 -	Janae Phelps, MD
2011-	Carole Wright, MD

D. Teaching Awards

2000 The Golden Apple Award for excellence in clinical teaching, Emergency Medicine Residency, Allegheny General Hospital, Pittsburgh, PA.

Consultant Appointments: (unpaid unless denoted)

1998	Visiting Physician, Emergency Medicine	Children's Hospital, Corrientes, Argentina
1998	Assistant Moderator	National Conference on Medical Indications for Air Bag Disconnection, conducted for the National Highway Traffic Safety Administration by the Ronald Reagan Institute of Emergency Medicine, George Washington University Hospital and The National Crash Analysis Center; Washington, DC
1998-1999	Visiting Specialist, Emergency Medicine	Latrobe Regional Hospital, Latrobe, Victoria, AUS (paid)
1998-1999	Visiting Fellow	Victorian Accident Research Center, Monash University, Claybourne, Victoria, AUS (paid)
2002	Invited Participant	Symposium on Graduated Driver Licensing: Documenting the Science of GDL
2002-2004	Medical Fellow, Transportation Safety	National Highway Traffic Safety Administration, Washington, DC
2003	Invited Participant	EMS Injury Prevention Roundtable Sponsored by the State and Territorial Injury Prevention Directors Association
2003	Facilitator	Partners Ethics Retreat: Institutional Ethics Case Discussion: Bed Negotiations
2003	Invited Reviewer	ACEP Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department with Acute Blunt Abdominal Trauma
2003	Invited Reviewer	World Health Organization, World Report on Road Traffic Injury Prevention. Released April, 2004
2004	Invited Participant	Centers for Disease Control National Center for Injury Prevention and Control Update on Injury Research Agenda Quality and Outcomes Workgroup
2004 - 2005	Consultant	MassSafe and Governor's Highway Safety Bureau.

		Evaluation of Massachusetts' CODES data
2006	Invited participant,	CDC workshop, "Impaired Drivers: Injured, Uncharged, and Untreated", Atlanta, GA
2006	Invited participant,	Transportation Review Board and National Academy of Sciences, "Safety Data Analysis Tools Workshop"
2006	Invited Participant	District of Columbia Strategic Highway Safety Plan Toward ZERO Fatalities and Injuries
2009	Expert Consultant	Habeas Unit, Arizona Case of Barry Jones (paid)
2011	Senior Consultant	Riyadh Military Hospital Riyadh, Kingdom of Saudi Arabia (paid)

Grants:

2000-2002 *Evaluation of Pennsylvania's Graduated Driver Licensing System*
Pennsylvania Department of Transportation:
Co-Principal Investigator
Annual Direct costs $200,000
% Effort: 15%

2001-2002 *Community-Based Intervention to Prevent Pediatric Head Injury*
Multiple Local Donors,
Director of Development, Co-Investigator
Annual Direct Costs: $100,000
% Effort: 7%

2002-2004 National Highway Traffic Safety Administration, Medical Fellowship
Principal Investigator.
1. Crash Investigation Research Engineering Network (CIREN) data analysis.
2. Crash Outcomes Data Evaluation System (CODES) data analysis
Annual Direct Costs: $25,000
% Effort: 10%

2002-2004 *Effects of Consensual Dating and Sexual Harassment on the Lives and Education of Emergency Medicine Residents*.
BWH Department of Emergency Medicine, Seed Grant.
Principal Investigator.
Annual Direct Costs: $3,000

2003-2004 The epidemiology of Epistaxis, NHAMCS.
Biolife

Co-Principal Investigator.
Total Cost: $10,000

2004 – 2007 Gallaudet University Safe
Child and Safe Communities Projects
District of Columbia Department of Transportation.
Principal Investigator
Annual Direct costs: $130,000

2007 - 2009 Gallaudet University Safe
Child and Safe Communities Projects.
District of Columbia Department of Transportation.
Principal Investigator
Total Direct costs: $238,000

Publications

A. Papers in Peer Reviewed Journals

Original Articles

1. **McKay MP**, Jolly BT. A Retrospective Review of Air Bag Deaths. Acad Emerg Med 1999 6:708-714.

2. **McKay MP**, Curtis LA. Car Safety Seats: Do Doctors Know Enough? Am J Emerg Med 2002;20:32-34.

3. **McKay MP**, Coben JH. Attitudes of Novice Teen Drivers and Their Parents About Pennsylvania's Graduated Driver Licensing Program: A Focus Group Analysis. Traffic Inj Prev 2002;3(4):257-261.

4. Rich B, **McKay MP**. Cubital Tunnel Syndrome: A Case Report and Discussion. J Emerg Med 2002;23(4):347-350

5. **McKay MP**, Curtis L. Kids in Cars – Keeping Them Safe at Every Age. Contemp Peds. 2003;20(9):65-81.

6. SAEM Ethics Committee: Schmidt TA, Salo D, Hughes JA, Abbott JA, Geiderman JM, Johnson CX, McClure KB, **McKay MP,** Razzak JA, Schears RM, Solomon RC. Confronting the Ethical Challenges to Informed Consent in Emergency Medicine Research. Acad Emerg Med. 2004;11(10): 1082-1089

7. SAEM Ethics Committee: Schmidt TA, Abbott JA, Geiderman JM, Hughes JA, Johnson CX, McClure KB, **McKay MP,** Razzak JA, Salo D, Schears RM, Solomon RC. The Ethical Debate on Practicing Procedures on the Newly Dead. Acad Emerg Med. 2004;11(9): 962-966

8. **McKay MP**. Effects of Emerging Technology in Vehicles. Am J Emerg Med. (in press, 2005)

9. Pallin DF, Chng YM, **McKay MP,** Camargo CL, Pelletier AN. Epidemiology of Epistaxis in US Emergency Departments, 1992-2001. Ann Emerg Med, 2005;26(1):77-81.

10. Larkin GL, **McKay MP**. Six Deadly Sins and Seven Virtues: On teaching Professionalism. Surgery. 2005; 138(3): 490-497.

11. **McKay MP**. Maritime health emergencies. Occupational Medicine, 2007; 57(6):453-455.

12. Trowbridge M, **McKay MP,** Maio R. Comparison of Teen Driver Fatality Rates by Vehicle Type in the United States. Acad Emerg Med,2007;14(10):850-855.

13. Roberts D, **McKay MP,** Shaffer A. Rising Rates in Elderly ED Visits 1993-2003. Ann Emerg Med. 2008 Jun;51(6):769-74.

14. Fernandez, WR…. **McKay MP** … Brief motivational intervention to increase self-reported safety belt use among emergency department patients. Acad Emerg Med. 2008 May;15(5):419-25.

15. **McKay MP**, Coben JH, Larkin GL, Shaffer, A. Attitudes of Teenagers and their Parents to Pennsylvania's Graduated Driver Licensing System. Traffic Injury Prevention. 2008;9(3):217-223.

16. Boniface KS, Shokoohi H, Doctor S, Pourmand A, **McKay MP**. A Case of Acute Vision Loss: Ocular Ultrasound and Subretinal Hemorrhage. Am J Emerg Med. 2009;27:369.e5-369.e7

17. Schoenfield E, **McKay MP.** Weekend Emergency Department Visits in Nebraska: Higher Utilization, Lower Acuity, J Emerg Med. 2009 Feb 19. [Epub ahead of print]

18. Schoenfield E, **McKay MP.** Mastitis and MRSA: The calm before the storm? J Emerg Med. 2009 Feb 19. [Epub ahead of print]

19. Epstein SK, Burstein JL, Case RB, Gardner AF, Herman SH, Hirshon JM, Jermyn JR, **McKay MP,** et al. The National Report Card on the State of Emergency Medicine. Ann Emerg Med 2008: 53(1):4-148.

20. Fernandez WG, Winter MR, Mitchell PM, Bullock H, Donovan J, St. George J, Feldman JA, Gallagher SS, **McKay MP**, Bernstein E, Colton T. Six Month Follow up of Brief Intervention on Self-Reported Safety Belt Use Among Emergency Department Patients. Acad Emerg Med 2009; 16: 1221-1224.

21. **McKay MP**, Vaca FE, Field C, Rhodes K. Public Health in the ED: Overcoming Barriers to Implementation and Dissemination. Acad Emerg Med. 2009;16: 1132-1137.

22. Baker J, **McKay MP**. Analysis of EMS Activations in Shenandoah National Park 2003-2007. Prehosp Emerg Care. 2010;14(2):182-6.

23. Marshall R, Hunting C, **McKay MP.** The effect of driver age on the incidence and severity of upper extremity injuries due to second-generation front air bag deployment. Ann Adv Automot Med. 2010;54:215-22.

24. Cunningham RM , Harrison SR, **McKay M** , Mello MJ , Sochor M , Shandro JR , Walton MA , D'Onofrio G. National Survey of Emergency Department Alcohol Screening and Intervention Practices. Ann Emerg Med. 2010 Jun;55(6):556-62.

25. Boniface K, **McKay MP**, Lucas R, Shaffer A, Sikka N. Serious Injuries Related to the Segway® Personal Transporter: A Case Series. Ann Emerg Med. 2011 Apr;57(4):370-4.

26. Zehtabchi S, Nishijima DK, **McKay MP**, Clay Mann N. Trauma registries: history, logistics, limitations, and contributions to emergency medicine research. Acad Emerg Med. 2011 Jun;18(6):637-43.

27. Ashwell Z, McKay MP, Brubacher J, Gareau A. The Epidemiology of Lift-Accessed Mountain Biking Injuries at the Whistler Bike Park. Wilderness Environ Med. 2012 Jun;23(2):140-5

28. Moradi A, Motevalian SA, Mirkoohi M, **McKay MP**, Rahimi-Movaghar V. Exceeding the speed limit: prevalence and determinants in Iran. Int J Inj Contr Saf Promot. 2013;20(4):307-12

Refereed Proceedings of Meetings

1. **McKay MP**, Fitzharris M, Fildes B. Driver Injury Patterns in the United States and Australia: Does Beltwearing or Air Bag Deployment Make a Difference? 43rd Annual Proceedings of the Association for the Advancement of Automotive Medicine; 1999 Sep 20-21, Barcelona, Spain. Barrington (IL): Association for the Advancement of Automotive Medicine;1999.

2. **McKay MP,** Coben JH, Larkin GL. Driving Beliefs And Behaviors Of Novice Teen Drivers And Their Parents: Implications For Teen Driver Crash Risk. Annual Proceedings of the Association for the Advancement of Automotive Medicine. 2003 Sept 22-24, Lisbon, Portugal. Barrington (IL): Association for the Advancement of Automotive Medicine;2003.

3. **McKay MP.** Statewide Annual Hospital Charges For Acute Care Of Traffic Injuries: Nebraska, 2004 Annual Proceedings of the Association for the Advancement of Automotive Medicine. 2007. October 12-17, Melbourne, Australia. Barrington (IL): Association for the Advancement of Automotive Medicine;2007.

C. Book Chapters

1. **McKay MP**. Bradyarrhythmias. In: Rosen P, Hayden SR, Wolfe R, Schaider JJ, editors. The Five-Minute Emergency Medicine Consult, First Edition. Philadelphia: Lippincott, Williams & Wilkins; 1999:146-147.

2. **McKay MP**, Farrell SE, Ennis K, Binstadt ES. The Acute Care Experience in the Emergency Department. In: Silverstein NM, Maslow K, editors. Improving Hospital Care for Persons with Dementia. New York: Springer; 2005:75-98

3. **McKay MP**. Bradyarrhythmias. In: Rosen P, Hayden SR, Wolfe R, Schaider JJ, editors. The Five-Minute Emergency Medicine Consult, First Edition. Philadelphia: Lippincott, Williams & Wilkins; 2003.

4. **McKay MP**. Facial Trauma. In: Marx J, Hockberger, Walls R. editors. Rosen's Emergency Medicine, Concepts and Clinical Practice, Sixth Edition. New York: C.V. Mosby; 2006. Chapter 39.

5. **McKay MP.** Pathophysiology of Injury. Battle C, editor. Essentials Of Public Health Biology: A guide for the study of Pathyphysiology. Sudbury, MA. Jones and Bartlett; 2009. Chapter 14, pp 199-212

6. **McKay MP** and Curtis LA. The Emergency Physician in Injury Prevention. In Brian Rowe, editor. Evidence Based Emergency Medicine. West Sussex, UK. Blackwell Publishing Ltd, 2009 pp 589-599

7. **McKay MP**, Mayersak R. Facial Trauma. In: Marx J, Hockberger, Walls R. editors. Rosen's Emergency Medicine, Concepts and Clinical Practice, Seventh Edition. New York: *C*.V. Mosby; 2009. Chapter 39.

8. **McKay MP**, Mayersak R. Facial Trauma. UpToDate online medical. 2009

9. Cranmer H, and **McKay MP**. Rapid Needs Assessment. In: Kapur, G. and Smith J, eds. Emergency Public Health, Preparedness and Practice. New York. Jones and Bartlett Learning, in press 2010

E. Abstracts

1. Friedman DI, Larkin GL, **McKay MP**, Forjuoh SN, Coben JH. Like Father, Like Son? Concordance of Reported Bike Helmet Use Among Parents and Their School Age Children (abstract). Acad Emerg Med 2000;7:486.

2. Larkin GL, Friedman DI, **McKay MP**, Forjuoh SN, Coben JH. Predictors of Self-Reported Child Bicycle Helmet Use: A Derivation/validation Random School Survey (abstract). Acad Emerg Med 2000;7:486.

3. Friedman D, Forjuoh SN, Larkin GL, **McKay MP**, Coben JH. The Early Impact of a Community Coalition on Children's Bicycle Helmet Use (abstract). Acad Emerg Med 2000;7:427-b.

4. Friedman DI, Larkin GL, **McKay MP**, Forjuoh SN, Coben JH. Like Father, Like Son? Concordance of Reported Bike Helmet Use Among Parents and Their School Age Children. Abstracts of the Annual Meeting of the American Public Health Association, Boston, MA. November 2000

5. Larkin GL, Friedman DI, **McKay MP**, Forjuoh SN, Coben JH. Predictors of Self-Reported Child Bicycle Helmet Use: A Derivation/validation Random School Survey. Abstracts of the Annual Meeting of the American Public Health Association, Boston, MA. November 2000.

6. Friedman D, Forjuoh SN, Larkin GL, **McKay MP**, Coben, JH. The Early Impact of a Community Coalition on Children's Bicycle Helmet Use. *Abstracts of the* Annual Meeting of the American Public Health Association, Boston, MA. November 2000.

7. Friedman D, **McKay MP**, Coben JH, Larkin GL, Rodriguez A. Increasing Helmet Use in Children: Successes, Setbacks and Scooters. Annual Meeting of the American Association for the Surgery of Trauma, Seattle, WA. September 2001.

8. **McKay MP**, D'Antonio J, Friedman D, Coben JH. Teenagers Change Their Behavior Following Implementation of New Graduated Driver Licensing System. Annual Meeting for the Society of Academic Emergency Medicine. Acad Emerg Med 2002 9:467-a-468-a.

9. Friedman D, Coben JH, D'Antonio JA, **McKay MP**. The Impact of International Terrorism on Community-level Violence. Annual Meeting for the Society of Academic Emergency Medicine. Acad Emerg Med 2002 9:503-a

10. D'Antonio JA, Friedman D, Coben JH, **McKay MP.** Correlates of Gang Involved Homicide in Pittsburgh, PA. Annual Meeting for the Society of Academic Emergency Medicine. Acad Emerg Med 2002 9:472

11. Chng YM, Pallin DJ, **McKay MP**, Camargo JP. Epidemiology of Epistaxis. Research Forum of the American College of Emergency Physicians. October, 2004.

12. Silverstein NM. The Hospital Experience for Persons with Dementia: Four Perspectives. **McKay MP,** Farrell SJ, Ennis KA, Binstadt ES. The Acute Care Experience in the Emergency Department. Gerontological Society Meeting, November 2004.

13. **McKay MP**. Non-fatal Motorcycle Injuries: Helmets save Hospital Days and Hospital Charges. Society for Academic Emergency Medicine, May 2005

14. Roberts D, **McKay MP**. Trends in Elderly ED Visits 1993-2003: What Does the Future Hold? American College of Emergency Physicians, Research Forum, October, 2006

15. Contractor DN, Kapur GR, **McKay MP** "ROAD TRAFFIC INJURY PATTERNS AND IMPACT IN URBAN INDIA: THE VADODARA EXPERIENCE" Fourth Mediterranean Emergency Medicine Congress (MEMC IV) Sorrento, Italy, 15-19 September 2007.

16. Limpert J, **McKay MP**. Annual, Statewide Hospital Charges for the Acute Care of Fall Related Injury. Annual Meeting, American Public Health Association. Washington DC, November, 2007

17. Baker J, **McKay MP.** Five Years of Emergency Medical Services in Shenandoah National Park. Annual Meeting of the American Public Health Association, San Diego, CA, October 2008

18. Shaffer A, **McKay MP**. Alcohol and Violence Among DC Public High School Students . Biannual meeting of the Society for the Advancement of Violence and Injury Research. Atlanta, GA, 2009

19. Shaffer A, **McKay MP**. Alcohol and Violence Among DC Public High School Students . Research Day, The George Washington University, Washington, DC 2009

20. Hill J, Kamanga-Sollo G, **McKay MP**, Petinaux B, Shaffer A, Salazar L. Do Patients Know Who Does What in the Emergency Department and Does it Matter to Them? Research Day, The George Washington University, Washington, DC 2009

21. Grewal M, **McKay MP**, Shaffer A. Gang Membership in the Emergency Department.: What You Believe May Not Be True. Research Day, The George Washington University, Washington, DC 2009

22. White MP, **McKay MP**. Older Drivers: Attitudes and Beliefs. Annual Meeting of the Association for Automotive Medicine, Baltimore, MD. 2009

23. Boniface K, **McKay MP,** Lucas R, Shaffer A, Sikka NK. Self-Balancing Personal Transporters: New Vehicles for Injury. Annual Meeting of the American Public Health Association, Philadelphia, PA, 2009

24. Grewal M, **McKay MP**, Shaffer A. Gang Membership in the Emergency Department.: What You Believe May Not Be True. Annual Meeting of the American Public Health Association, Philadelphia, PA, 2009

25. Schroeder E, **McKay MP**. Lessons Learned: Application of the New York City Pedestrian Safety Study outside of New York City. Annual Meeting, Association for the Advancement of Automotive Medicine, Paris, France, October 2011

26. Ashwell Z, **McKay MP**, Brubacher JR, Gareau A, Jang W. The Epidemiology of Mountain Bike Park Injuries at the Whistler Bike Park. 2011 Canadian Injury Prevention and Safety Promotion Conference, Vancouver, November 2011

27. Schwartz J and **McKay MP.** Racial Disparities in Pediatric Unintentional Injury Visits to US Emergency Departments. Society for Academic Emergency Medicine, Chicago, 2012

28. Smith J, Bregman B, Blanchard J, AlAli N, **McKay MP**. Evaluation of an “ultra-short” 2-Question Screening Tool (PHQ-2) for Detecting Major Depression in ED Patients. Society for Academic Emergency Medicine, Chicago, 2012

F. Invited Publications
Commentaries and Editorials

1. **McKay MP**. Commentary: Emergency Physicians and Emerging Technologies: Special Crash Investigations.(*NHTSA Notes*). Ann Emerg Med. 2003;41(4):758-579

3. **McKay, MP**, Vaca, FG. Commentary: Pedestrian Roadway Fatalities: Profiling the Problem. (NHTSA Notes) Ann Emerg Med. 2003;42(4):480-482

4. **McKay MP**. Commentary: "You Drink, You Drive, You Lose;" Reaching the Target Audience is Not Enough .NHTSA Notes, Ann Emerg Med. 2004;44(2):155-6.

5. **McKay MP,** Vaca FG. Commentary: Supersized Vans: A Supersized Problem. NHTSA Notes. Acad Emerg Med. 2004;44(6):657-659.

6. **McKay MP.** Can the Car Tell Us Who Needs The Trauma Team? Editorial. Ann Emerg Med 2005;45:51-2

7. **McKay MP.** Novice Teen Drivers and Crashes – Just How Worried Should We Be And What Should We Do About it? NHTSA Notes. Ann Emerg Med 2005;45(6): 639-642.

8. **McKay MP**, Garrison HG. Reducing Drunk Driving: What is the Role of the Emergency Physician? NHTSA Notes. Ann Emerg Med, NHTSA-Notes. 2006:46(6): 553-5.

9. **McKay, MP**. Seat Belt Use – *Nearly* an Epidemic of Safety. NHTSA Notes. Ann Emerg Med, 2006: 47(4):370-1

10. **McKay MP.** NHTSA Notes: What happens to crash victims after we resuscitate them? Ann Emerg Med. 2007;49(6):818-20.

11. **McKay, MP**. Emergency medical services: just the beginning of an effective system. NHTSA Notes. Ann Emerg Med. 2008;52(4):454-6

12. **McKay, MP**. Pedestrians: Truly Vulnerable Road Users. NHTSA Notes. Ann Emerg Med. 2009; 53(6):825-826.

13. **McKay, MP** Women and Alcohol: Increasingly Willing to Drive While Impaired? NHTSA Notes. Ann Emerg Med. Ann Emerg Med. 2010;55(2):211-4

14. **McKay, MP**. Children injured in motor vehicle traffic crashes. National Highway Traffic Safety Administration (NHTSA) notes. Ann Emerg Med. 2010 Dec;56(6):688-9.

15. **McKay, MP**. Emerging Crash Avoidance Technology: What Does it mean to my ED? National Highway Traffic Safety Administration (NHTSA) notes. Ann Emerg Med. 2011: 58:206-207

16. **McKay MP**. Studying kids in motor vehicle crashes is tough! Acad Emerg Med. 2013;20(9):937-8.

G. Letters

1. **McKay MP**. Letter to the Editor: Special Crash Investigations. Ann Emerg Med. 2003;42(4):599-600.

2. Cooper Z, **McKay MP**. Letter to the Editor: Diabetic Mastopathy. Am J Emerg Med. Am J Emerg Med. 2004;22(6):498.

3. **McKay MP.** Letter to the Editor: Traffic Safety in the United States. Am J Public Health. 2004;94(2):170-1.

4. Grewal G, **McKay MP**, Teitlebaum AS. Gang Members in the ED: What You Believe May Not Be True. Am J Emerg Med. 2011; 29(7): 834-5.

I. Other Publications

Clinical Communications

1. **McKay MP**. Physics of Sport Utility Vehicles. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2003;7(1):3-9.

2. **McKay MP**. Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2003; December

3. **McKay MP**. Updating the CDC Research Agenda. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2003; December.

4. **McKay MP.** Trauma and Injury Prevention Section: Who We Are and What We Do. Section News, Young Physicians Section. American College of Emergency Physicians. 2004;in press

5. **McKay MP**. Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2004; April.

6. **McKay MP**. Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2004; July.

7. **McKay MP**. Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2004; September.

8. **McKay MP**. Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; January.

9. **McKay MP**. Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; April.

10. **McKay MP.** Letter from the Chair: The CDC's Acute Care Injury Research Agenda. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; July.

11. **McKay MP.** Letter from the Chair: Not the Last Gasp. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; September

12. **McKay MP**. The World's First Automobile Fatality. Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; September

Thesis

McKay MP. Pennsylvania's Strengthened Graduated Driver Licensing System: Reactions of Parents And Teens And Implications For Crash Risk. Pittsburgh (PA): University of Pittsburgh; 8/10/2002.

Presentations

Regional

2000	Occupant Safety: Whose Job Is It Anyway? Emergency Medical Services of Western Pennsylvania
2001	Biomechanics of Human Injury Guthrie One Helicopter Service, Robert Packer Hospital
2000–2001	Occupant Safety and Falls in the Elderly Trauma and Injury Prevention Seminar (TIPS) for EMS Professionals Municipal and Regional EMS provider groups throughout Pennsylvania
2005	The Demented Patient in the Emergency Department: Information Critical Caregiving at Its Best: Positive Interventions in Alzheimer Care Alzheimer's Association: National Capital Area Chapter
2005	Alcohol Intervention and Injury Prevention "Alcohol Screening, Intervention, and Confidentiality Requirements in Trauma Centers and Emergency Departments" Innovators Combating Substance Abuse
2006	The Demented Patient in the Emergency Department: Information Critical Southern Maryland Dementia Care Conference

National

2001	Moderator: "Professionalism" Society for Academic Emergency Medicine
2003	"Epistaxis" Scientific Assembly, American College of Emergency Physicians

2004	"Public Health Advocacy: The Researcher in Action" Annual Meeting, Society for Academic Emergency Medicine
2004	"CODES for the End-User" Annual meeting, Crash Outcomes Data Evaluation System (CODES)
2005	The Demented Patient in the Emergency Department Alzheimer's Association Annual Meeting
2006	Minimal Risk Research and the IRB Society for Academic Emergency Medicine Annual Meeting
2006	Neurological Trauma Evidence Based Review of Emergency Medicine
2007	The care of the demented patient in the Emergency Department Alzheimer's 2007: Strategic Directions in Research and Care
2008	Ambulance Transport Safety Summit Transportation Research Board George Washington University Site Director
2010	Transportation research in the ED: Who, What, When, Why? M-CASTL Transportation Research and Education Conference The Michigan Center for Advancing Safe Transportation throughout the Lifespan University of Michigan
2013	When the Engineer Can't See: Head on Collision of Two Freight Trains Transportation Research Board, Annual Meeting
2013	Medical Concerns and Sleep American Occupational Health Conference
2013	Toxicology and the NTSB National Safety Council Division of Alcohol, Drugs, and Impairment
2013	Reaching Zero: Actions to Eliminate Alcohol-Impaired Driving International Association for Chemical Testing
2013	Medical Investigation into a Blind Railroad Engineer Transportation Research Board
2013	The Role of the Medical Examiner Support of Transportation Accident Investigations National Association of Medical Examiners

2014	Drug Trends in Aviation Transportation Research Board, Annual Meeting

International

1998	Pediatric Trauma Care Children's Hospital, Corrientes, Argentina
2006	Injury Control for the Emergency Physician International College of Emergency Physicians, Halifax, Nova Scotia, Canada
2010	Keynote Speaker: What's important BEFORE the Biomechanics ICRASH bi-annual meeting Leesburg, VA

Service to Community

Regional

1999-2002	Medical Command Physician	Lifeflight Aeromedical Transport Service, Allegheny General Hospital
1999-2002	Member	Pittsburgh Helmet Coalition
1999-2000	Chair, Funding Committee	Pittsburgh Helmet Coalition
2000-2002	Director of Development	Pittsburgh Helmet Coalition
1999-2002	Medical Advisor, Health Course	Sto Rox Middle School, McKeesport, PA
2002-2004	Member	SAFE Coalition, Massachusetts
2005	Legislative Testimony	Maryland House of Delegates, Against repeal of motorcycle helmet law
2006	Legislative Testimony	Maryland House of Delegates, Against repeal of motorcycle helmet law
2006-2010	Traffic Records Committee	District of Columbia
2006	Legislative Testimony	District of Columbia City Council For repeal of alcohol exclusion clause
2007	Legislative Testimony	Maryland House of Delegates, Against repeal of motorcycle helmet law

2009-	Board of Directors	Washington Regional Alcohol Program (WRAP)

National

2006 - 2012	Advisory Board	Campaign for Public Health

Exhibit 10

DECLARATION OF MARY PAT McKAY, M.D.

I, Dr. Mary Pat McKay, declare under penalty of perjury the following to be true to the best of my information and belief:

1. I am a board certified in emergency medicine specializing in trauma care, traffic safety and ethics in emergency medicine. I am an emergency room physician at George Washington University Hospital, where I also serve as Professor of Emergency Medicine. I am also the Director of the Center for Injury Prevention and the Chair of the Trauma Care and Injury Control Committee for the American College of Emergency Physicians. A copy of my *curriculum vitae*, which reflects my education and experience, is true and correct and attached hereto as "Attachment A."

2. At the request of counsel for Barry Lee Jones ("Mr. Jones"), I have been hired as a emergency medicine/abdominal injury expert to review certain issues in Mr. Jones's case.

3. The purpose of my consultation was to review all of the autopsy results, photographs, and medical history of the victim and opine as to

the nature and timing of the fatal injury to the victim.

4. The materials I reviewed to perform my review included medical records, photographs, and the autopsy report.

1. My observations and professional opinions are set forth in the Report signed by me on October 30, 2009, a true and correct copy of which is attached hereto as "Attachment B."

I declare under the penalty for perjury under the laws of the United States and the District of Columbia, that the foregoing is true and correct.

Signed this 30th day of October, 2009.

Mary Pat McKay, M.D., M.P.H.

Exhibit A

Mary Patricia McKay, M.D., M.P.H.

Home address: 5311 Sherier Place, NW
Washington, DC 20016
(202) 362-1786

Office Address: Center for Injury Prevention and Control
Department of Emergency Medicine
George Washington University Medical Center
2150 Pennsylvania Ave, NW
Suite 2B-409
Washington, DC 20037
Office: (202) 741-2947 FAX: 202-741-2921

E-Mail: mmckay@mfa.gwu.edu

Date of Birth: January 5, 1965; New York City, New York
US Citizen

Education:

A. Undergraduate

1982-1986 B.A. Yale University, New Haven, CT
Magna cum laude
Distinction in Major
Master's Award for Contribution to College Life, Berkeley College

B. Graduate

1986-1990 M.D. Columbia College of Physicians and Surgeons, NY, NY
Health Professions Scholarship, United Stated Navy
Alpha Omega Alpha
Admiral John Lyons Award

1999-2002 M.P.H. University of Pittsburgh, Pittsburgh, PA
Best Master's Thesis, Multidisciplinary Master's of Public Health,
Delta Omega National Honor Society

C. Postdoctoral Training

1990-1991 Intern, Basic Surgery (Lieutenant, USNR, Medical Corps)
Naval Hospital San Diego, San Diego, CA
Outstanding Intern, Department of Surgery

1995-1998 Resident, Emergency Medicine
The George Washington University Medical Center, Washington, DC
Resident Research Award, Emergency Medicine

Employment:

1991-1995	Senior Medical Officer (Lieutenant/Lieutenant Commander USNR, Medical Corps) Naval Branch Clinic, Ballston Spa, NY Affiliate of Naval Hospital Groton, Groton, CT National Defense Medal Meritorious Unit Commendation Meritorious Service Medal
1998-1999	Attending Staff, temporary, Emergency Department Central Maine Medical Center, Lewiston, ME
1998	Attending Staff, temporary, Emergency Department Ball Memorial Hospital, Muncie, IN
1998-1999	Senior Registrar, Emergency Medicine Dandenong and District Hospital, Melbourne, AUS
1998-1999	Research Fellow Monash University Accident Research Center, Melbourne, AUS
1998-1999	Staff Physician, Emergency Department Southeastern Private Hospital, Melbourne AUS
1999-2002	Assistant Professor of Emergency Medicine MCP/Hanneman School of Medicine Attending Physician, Emergency Medicine Allegheny General Hospital, Pittsburgh, PA
2002-2004	Instructor/Assistant Professor of Emergency Medicine Harvard Medical School Attending Physician, Emergency Medicine Brigham and Women's Hospital, Boston, MA
2004-	Associate Professor of Emergency Physician and Public Health The George Washington University Attending Physician, Emergency Medicine The George Washington University Hospital, Washington, DC
2004-2009	Attending Physician, Emergency Medicine Prince George Hospital, Cheverly, MD
2008-	Attending Emergency Physician Veterans' Administration Hospital, Washington, DC
2009-	Medical Director Emergency Medicine Training Center Medical Faculty Associates, Washington, DC

Professional Registrations, Licensure, and Certification:

1984-	Certification, Basic Life Support
1989-	Certification, Advanced Cardiac Life Support
1991-	Certification, Advanced Trauma Life Support
1991-1996	Medical License, New York
1992-1995	Certification, Radiation Safety Officer, US Navy
1992-1995	Instructor, Pediatric Advance Life Support
1992-2004	Certification, Pediatric Advanced Life Support
1995-1999	Medical License, Virginia
1998-1999	Medical Registration, Victoria, Australia (temporary)
1998	Medical License, Indiana (temporary)
1998-1999	Medical License, Maine (temporary)
1999	Diplomate, American Board of Emergency Medicine
1999-2003	Medical License, Pennsylvania
1999-	Board Certification, American Board of Emergency Physicians
2002-2004	Medical License, Massachusetts
2002-	Fellow, American College of Emergency Physicians
2004 -	Medical License, Maryland
2004-	Medical License, District of Columbia
2008	Recertification, American Board of Emergency Physicians

Societies and Honors

Memberships:

1995-	American College of Emergency Physicians (ACEP)
1995-	Society for Academic Emergency Medicine (SAEM)
1995-1998	Emergency Medicine Residents Association (EMRA)
1999-	Association for the Advancement of Automotive Medicine (AAAM)
1999-2002	Pennsylvania Chapter, American College of Emergency Physicians
2000-	American Public Health Association (APHA)
2002-2004	Massachusetts Chapter, American College of Emergency Physicians (MACEP)
2003 -	Cochrane Injuries Group
2004-	Society of Automotive Engineers (SAE)
2004-	District of Columbia Chapter, American College of Emergency Physicians
2005-	American Trauma Society (ATS)
2006 -	Society for the Advancement of Violence and Injury Research (SAVIR)

Peer Review/Editorial Boards:

1998-	Peer Reviewer	Annals of Emergency Medicine
2001-	Peer Reviewer	Academic Emergency Medicine
2004 -	Section Editor, NHTSA notes	Annals of Emergency Medicine
2006 -	Peer reviewer	American Journal of Preventive Medicine
2007 -	Department Head, NHTSA notes	Annals of Emergency Medicine
2008-	Editorial Board Member	Traffic Injury Prevention

Leadership positions:

2000- 2004	Ethics Committee, Member, Society for Academic Emergency Medicine
2001-2003	Injury Prevention and Control Section, Chair Elect, American College of Emergency Physicians
2002-2004	Public Health Committee, Massachusetts College of Emergency Physicians
2002- 2005	Trauma and Injury Prevention Section, Chair, American College of Emergency Physicians
2003 - 2004	Trauma and Injury Control Committee, member, American College of Emergency Physicians
2003 -	Membership Committee, member, Association for the Advancement of Automotive Medicine
2004-	Board of Directors, Association for the Advancement of Automotive Medicine
2004-2007	Trauma and Injury Control Committee, Chair, American College of Emergency Physicians
2004-2007	EMS Committee, Liaison, American College of Emergency Physicians
2006-2007	Public Policy Committee, Society for the Advancement of Violence and Injury Research
2006-2009	Report Card Task Force, American College of Emergency Physicians
2006-	Executive Committee, Association for the Advancement of Automotive Medicine
2008-	Policy Committee, Chair, Association for the Advancement of Automotive Medicine
2008-	Secretary, Association for the Advancement of Automotive Medicine

Administrative Duties

2002-2004	Massachusetts Chapter of American College of Emergency Physicians Representative to SAFE (Seatbelts are for Everyone) Coalition, Massachusetts April 1, 2003: Legislative testimony to MA Joint Public Safety Committee
2003	Representative from the American College of Emergency Physicians to the inaugural meeting of The Injury Coalition

2004	Official representative for the American College of Emergency Physicians to the Centers for Disease Control planning group for 2005 National Injury Conference
2005-	Official representative for the American College of Emergency Physicians to the National Commission Against Drunk Driving (NCADD)
2005	Representative of the American College of Emergency Physicians to the National Trauma-EMS Stakeholders Group – Advisory to HRSA
2006-	Advisory Board member representing the American College of Emergency Physicians for the Campaign for Public Health

Awards and Honors

2008	Elaine Wodzin Young Achiever Award Association for the Advancement of Automotive Medicine

University Activities and Administrative Duties

A. Departmental

1995-1998	Resident Committee The George Washington University Medical Center,
1997-1998	Education Committee, Chair Department of Emergency Medicine, The George Washington University
1999-2002	Resident Selection Committee Department of Emergency Medicine Allegheny General Hospital
1999-2000	Member, Operations Group Department of Emergency Medicine Allegheny General Hospital
2000-2002	Member, Research Group Department of Emergency Medicine, Allegheny General Hospital
2008-	Member, Research Section Department of Emergency Medicine The George Washington University
2009 -	Chair, Section of Injury and Toxicology Department of Emergency Medicine The George Washington University

B. Hospital

2000-2002 Ethics Committee, Allegheny General Hospital, Pittsburgh, PA

2002-2004 Ethics Committee, Brigham and Women's Hospital, Boston, MA

2004 Second Call Provider, Ethics Consultation Service
Brigham and Women's Hospital, Boston, MA

2003-2004 Brigham and Women's Hospital Representative to SAFE (Seatbelts are for Everyone) Coalition, Massachusetts

2005 - Trauma Committee, The George Washington University Hospital

C. University

2005-6 Chair Search Committee, Department of Prevention and Community Health, School of Public Health and Health Services, The George Washington University

2008 - Mental Health Task Force, The George Washington University

Educational Achievements

A. Courses Taught

Undergraduate Education

2006 Biological Basis of Disease,
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2007 Public Health and Public Policy
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2009 Public Health
The George Washington University School of Public Health and Health Services
Guest Lecturer, two hours

2010 Case Studies in Injury Control
Course Director
3 credit course

Undergraduate Medical Education

1994-1995 Problem-Oriented Learning. SUNY Albany School of Medicine
Preceptor, Pediatric Reactive Airway Disease, 40 hours

1995-1998	Fourth-year clerkship, Emergency Medicine, Georgetown University Medical School Preceptor, Simulated Patient Encounters, 15 hours
1998	Fourth-Year Didactic Elective: "Telling the News," The George Washington University School of Medicine Course developer and lecturer, 30 hours
1998	Fourth year Emergency Medicine Rotation, The George Washington University School of Medicine Teaching resident, primarily responsible for all didactic teaching. 40 hours
1999-2002	Allegheny General Hospital Emergency Medicine Elective Role: Lecturer, interactive sessions MCP/Hahnemann School of Medicine, 60 hours
2003	Injury Epidemiology, Harvard Medical School Guest Lecturer, two hours
2003	Emergency Medicine Rotation, Harvard Medical School: Orthopedics Guest Lecturer, one hour
2003	Emergency Medicine Rotation, Harvard Medical School: Hand Injuries Guest Lecturer, one hour
2003	Emergency Medicine Lecture Series, Harvard Medical School, Brigham and Women's Hospital: Environmental Emergencies Guest Lecturer, one hour
2004	Injury Epidemiology, Harvard Medical School Guest Lecturer, two hours
2004	Introduction to Clinical Medicine Harvard Medical School Preceptor, 40 hours
2005	Domestic Violence The George Washington University Medical School Guest Lecturer, two hours
2005	CAP Preceptor The George Washington University Medical School, 40 hours
2006	Global Health/Emerging Diseases, The George Washington University Medical Center Guest Lecturer, two hours

2006 International Emergency Medicine,
The George Washington University Medical Center
Guest Lecturer, two hours

2008 International Emergency Medicine,
The George Washington University Medical Center
Guest Lecturer, two hours

2008-2009 CAP Preceptor
The George Washington University Medical School, 40 hours

2009 Capstone: Practice of Medicine IV
The George Washington University Medical Center
Guest Lecturer, two hours

2009 CAP Preceptor
The George Washington University Medical School, 40 hours

Graduate Medical Courses

1999-2002 Emergency Medicine Lecture Series, Allegheny General Hospital
Lectures: Ethics and the Emergency Physician
Pediatric GI Bleeding
Pain
Child Passenger Safety
Pneumonia
Professionalism
Research 101
Arthritis

Graduate Public Health Education

2005 Traffic Injury Prevention: Science, Policy, and Behavior
Guest Lecturer, Injury Research Course
The George Washington University School of Public Health and Health Sciences

2006 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

2006 Public Policy
Guest Lecturer, Gun Violence and the Emergency Physician
The George Washington School of Public Health and Health Sciences

2007 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health

Sciences

2008 Traffic Safety as a Public Health Problem
Course Instructor: 1 Credit Topics course
The George Washington University School of Public Health and Health Sciences

2008 Traffic Injury Prevention: Science, Policy, and Behavior
Guest Lecturer, Injury Research Course
The George Washington University School of Public Health and Health Sciences

2009 Emergency Public Health: Trauma Care and Injury Control
Guest Lecturer, Emergency Public Health Course
The George Washington University School of Public Health and Health Sciences

Invited Teaching Presentations

2000 Car Seat Safety
Obstetrics and Gynecology Grand Rounds, Allegheny General Hospital

2000 Occupant Safety: Seat Belts and Air Bags
University of Pittsburgh and Allegheny General Emergency Medicine Combined Grand Rounds

2000 Car Seat Safety
Pediatrics Grand Rounds, Allegheny General Hospital

2000 Occupant Safety: Seat Belts and Air Bags
Emergency Medicine Grand Rounds, Georgetown University Medical Center, Washington, DC

2001 Biomechanics of Injury
Grand Rounds, The George Washington University Medical Center, Department of Emergency Medicine, Washington, DC

2002 Blunt Injury Biomechanics
Critical Care Transport Team Lecture Series

2002 Biomechanics 101
HAEMR Residency Conference Series

2003 Epidemiology of Vehicular Injury
HAEMR Residency Conference Series

2003 Advances in Trauma Care
HAEMR Residency Conference Series

2003	Biomechanics of Vehicular Injury Emergency Nursing Training Series
2004	Biomechanics of Crash Injury Paramedic Training Series, Boston EMS
2004	Time Critical Resource Allocation Schwartz Rounds, Hospital-wide ethics series Brigham and Women's Hospital
2004	Recent Research Lunch lecture series Boston Medical Center, Department of Emergency Medicine
2006	Biomechanics of Motor Vehicle Injury Trauma Grand Rounds The George Washington University Hospital
2006	Neurological Trauma Emergency Medicine Grand Rounds The George Washington University Hospital
2006	Biomechanics and the Trauma Surgeon Trauma Grand Rounds RW Cowley Shock Trauma Center University of Maryland
2006	Injury Coding Crash Analysis, invited lecturer The George Washington University School of Engineering
2007	Injury Pathophysiology Basic Pathophysiology The George Washington University
2007	Biomechanics and Pedestrian Injury Grand Rounds, Emergency Medicine St. Lukes – Roosevelt Medical Center
2007	Injury Coding Crash Analysis, invited lecturer The George Washington University School of Engineering
2008	Injury Pathophysiology Basic Pathophysiology The George Washington University
2008	Evidence Based Injury Prevention for the Emergency Physician

Grand Rounds, Emergency Medicine
The George Washington University Hospital

2008 Screening and Brief Intervention for Alcohol Overuse
Grand Rounds, Emergency Medicine
The George Washington University Hospital

2008 Gang Violence: Effects in the Emergency Department
Cook County and University of Chicago Hospitals
Combined Emergency Medicine Grand Rounds

2009 From Pediatrics to Geriatrics: Injury Prevention in Primary Care
DCAPA CME 2009 The PA in Primary Care: A Capital Idea

2009 Introduction to Research: Framing the research question
Combined Emergency Medicine fellowship didactic rounds
The George Washington University

2009 Injury Control in Emergency Medicine
Visiting Physician Program, Department of Emergency Medicine
The George Washington University

Continuing Medical Education

2001 Sonography in the Emergency Department: Practice Guidelines
Emergency Ultrasound Course, Allegheny General Hospital
Pittsburgh, PA

2004 Crash Outcome Analysis for Emergency Medicine Researchers:
Using NASS/CDS to Further the State of the Art
Society for Academic Emergency Medicine
Orlando, FL

2004 Biomechanics of Motor Vehicle Injury
Emergency Medicine into the 21st Century
Boston, MA

2006 Neurological Trauma
Evidence-Based Emergency Medicine
Washington, DC

B. New Courses Developed

2000 TIPS for EMS: Trauma Injury Prevention Seminar for Emergency Medical Systems Professionals. Program aimed at providing local EMS professionals with the skills and

data to perform community based injury prevention interventions. Personally developed one-third of the course.

2001 **Didactic Emergency Medicine.** Co-developed this monthly course designed to improve fund of knowledge, clinical decision-making, and test-taking skills of emergency medicine residents.

2004 **Training in Crash Outcomes Analysis.** Developed and produced one-day training course for emergency physicians on using nationally available data from the National Automotive Sampling System to perform epidemiologic studies.

2008 **Topics: Traffic Safety.** 1 credit graduate course in The George Washington University, School of Public Health and Health Services

2009 **Case Studies in Injury Control.** 3 credit undergraduate course. The George Washington University.

C. Student Mentoring

Graduate Student Mentoring

2005-6	The George Washington University School of Public Health and Health Services MPH Special Project, David Roberts, PhD Trends in Elderly Visits to the ED, 1993-2003
2006 -2010	The George Washington University Medical Center Global Health Track, Jean Limpert
2007-2009	The George Washington University School of Public Health and Health Services Practicum and Capstone, Marie White
2006-2007	The George Washington University Medical Center Research Project: Sports Injury Ali Noor
2006-2009	The George Washington University Medical Center Research Project: Gangs in the Emergency Department Mandeep Grawal
2008 -	The George Washington University Medical Center Research Project: Do ED Patients Know Who Their Doctor IS and Does It Matter to Them? Jonathan Hill (Gill Fellowship recipient) Gladys Kamanga-Sollo
2009-	The George Washington University Medical Center Research Project: ED Mode of Arrival

Sarah Pai (Gill Fellowship recipient)

2008 - The George Washington University School of Public Health and Health Services
Culminating Experience, Rafael Marshall

2009 - The George Washington University School of Public Health and Health Services
Culminating Experience, Rob Tabor

Resident Mentoring

2007 Elizabeth Schoenfeld, MD
Statewide Emergency Department Visits in Nebraska:
Weekends are different than weekdays

2008 Jana Baker, MD
Epidemiology of EMS runs in Shenandoah National Park

2006-2009 Annette Dorfman, MD

2009 - Janae Phelps, MD

D. Teaching Awards

2000 The Golden Apple Award for excellence in clinical teaching, Emergency Medicine Residency, Allegheny General Hospital, Pittsburgh, PA.

Consultant Appointments: (unpaid unless denoted)

1998	Visiting Physician, Emergency Medicine	Children's Hospital, Corrientes, Argentina
1998	Assistant Moderator	National Conference on Medical Indications for Air Bag Disconnection, conducted for the National Highway Traffic Safety Administration by the Ronald Reagan Institute of Emergency Medicine, George Washington University Hospital and The National Crash Analysis Center; Washington, DC
1998-1999	Visiting Specialist, Emergency Medicine	Latrobe Regional Hospital, Latrobe, Victoria, AUS (paid)

1998-1999	Visiting Fellow	Victorian Accident Research Center, Monash University, Claybourne, Victoria, AUS (paid)
2002	Invited Participant	Symposium on Graduated Driver Licensing: Documenting the Science of GDL
2002-2004	Medical Fellow, Transportation Safety	National Highway Traffic Safety Administration, Washington, DC
2003	Invited Participant	EMS Injury Prevention Roundtable Sponsored by the State and Territorial Injury Prevention Directors Association
2003	Facilitator	Partners Ethics Retreat: Institutional Ethics Case Discussion: Bed Negotiations
2003	Invited Reviewer	ACEP Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department with Acute Blunt Abdominal Trauma
2003	Invited Reviewer	World Health Organization, World Report on Road Traffic Injury Prevention. Released April, 2004
2004	Invited Participant	Centers for Disease Control National Center for Injury Prevention and Control Update on Injury Research Agenda Quality and Outcomes Workgroup
2004 - 2005	Consultant	MassSafe and Governor's Highway Safety Bureau. Evaluation of Massachusetts' CODES data
2006	Invited participant,	CDC workshop, "Impaired Drivers: Injured, Uncharged, and Untreated", Atlanta, GA
2006	Invited participant,	Transportation Review Board and National Academy of Sciences, "Safety Data Analysis Tools Workshop"
2006	Invited Participant	District of Columbia Strategic Highway Safety Plan Toward ZERO Fatalities and Injuries
2009	Expert Consultant	Habeas Unit, Arizona Case of Barry Jones (paid)

Grants:

2000-2002 *Evaluation of Pennsylvania's Graduated Driver Licensing System*
Pennsylvania Department of Transportation:
Co-Principal Investigator
Annual Direct costs $200,000
% Effort: 15%

2001-2002 *Community-Based Intervention to Prevent Pediatric Head Injury*
Multiple Local Donors,
Director of Development, Co-Investigator
Annual Direct Costs: $100,000
% Effort: 7%

2002-2004 National Highway Traffic Safety Administration, Medical Fellowship
Principal Investigator.
1. Crash Investigation Research Engineering Network (CIREN) data analysis.
2. Crash Outcomes Data Evaluation System (CODES) data analysis
Annual Direct Costs: $25,000
% Effort: 10%

2002-2004 *Effects of Consensual Dating and Sexual Harassment on the Lives and Education of Emergency Medicine Residents.*
BWH Department of Emergency Medicine, Seed Grant.
Principal Investigator.
Annual Direct Costs: $3,000

2003-2004 The epidemiology of Epistaxis, NHAMCS.
Biolife
Co-Principal Investigator.
Total Cost: $10,000

2004 – 2007 Gallaudet University Safe
Child and Safe Communities Projects
District of Columbia Department of Transportation.
Principal Investigator
Annual Direct costs: $130,000

2007 - 2009 Gallaudet University Safe
Child and Safe Communities Projects.
District of Columbia Department of Transportation.
Principal Investigator
Total Direct costs: $238,000

Publications

A. Papers in Peer Reviewed Journals

Original Articles

1. **McKay MP**, Jolly BT. A Retrospective Review of Air Bag Deaths. Acad Emerg Med 1999 6:708-714.

2. **McKay MP**, Curtis LA. Car Safety Seats: Do Doctors Know Enough? Am J Emerg Med 2002;20:32-34.

3. **McKay MP**, Coben JH. Attitudes of Novice Teen Drivers and Their Parents About Pennsylvania's Graduated Driver Licensing Program: A Focus Group Analysis. Traffic Inj Prev 2002;3(4):257-261.

4. Rich B, **McKay MP**. Cubital Tunnel Syndrome: A Case Report and Discussion. J Emerg Med 2002;23(4):347-350

5. **McKay MP**, Curtis L. Kids in Cars – Keeping Them Safe at Every Age. Contemp Peds. 2003;20(9):65-81.

6. SAEM Ethics Committee: Schmidt TA, Salo D, Hughes JA, Abbott JA, Geiderman JM, Johnson CX, McClure KB, **McKay MP,** Razzak JA, Schears RM, Solomon RC. Confronting the Ethical Challenges to Informed Consent in Emergency Medicine Research. Acad Emerg Med. 2004;11(10): 1082-1089

7. SAEM Ethics Committee: Schmidt TA, Abbott JA, Geiderman JM, Hughes JA, Johnson CX, McClure KB, **McKay MP,** Razzak JA, Salo D, Schears RM, Solomon RC. The Ethical Debate on Practicing Procedures on the Newly Dead. Acad Emerg Med. 2004;11(9): 962-966

8. **McKay MP**. Effects of Emerging Technology in Vehicles. Am J Emerg Med. (in press, 2005)

9. Pallin DF, Chng YM, **McKay MP,** Camargo CL, Pelletier AN. Epidemiology of Epistaxis in US Emergency Departments, 1992-2001. Ann Emerg Med, 2005;26(1):77-81.

10. Larkin GL, **McKay MP**. Six Deadly Sins and Seven Virtues: On teaching Professionalism. Surgery. 2005; 138(3): 490-497.

11. **McKay MP**. Maritime health emergencies. Occupational Medicine, 2007; 57(6):453-455.

12. Trowbridge M, **McKay MP,** Maio R. Comparison of Teen Driver Fatality Rates by Vehicle Type in the United States. Acad Emerg Med,2007;14(10):850-855.

13. Roberts D, **McKay MP,** Shaffer A. Rising Rates in Elderly ED Visits 1993-2003. Ann Emerg Med. 2008 Jun;51(6):769-74.

14. Fernandez, WR.... **McKay MP** ... Brief motivational intervention to increase self-reported safety belt use among emergency department patients. Acad Emerg Med. 2008 May;15(5):419-25.

15. **McKay MP**, Coben JH, Larkin GL, Shaffer, A. Attitudes of Teenagers and their Parents to Pennsylvania's Graduated Driver Licensing System. Traffic Injury Prevention. 2008;9(3):217-223.

16. Boniface KS, Shokoohi H, Doctor S, Pourmand A, **McKay MP**. A Case of Acute Vision Loss: Ocular Ultrasound and Subretinal Hemorrhage. Am J Emerg Med. 2009;27:369.e5-369.e7

17. Schoenfield E, **McKay MP.** Weekend Emergency Department Visits in Nebraska: Higher Utilization, Lower Acuity, J Emerg Med. 2009 Feb 19. [Epub ahead of print]

18. Schoenfield E, **McKay MP.** Mastitis and MRSA: The calm before the storm? J Emerg Med. 2009 Feb 19. [Epub ahead of print]

19. Epstein SK, Burstein JL, Case RB, Gardner AF, Herman SH, Hirshon JM, Jermyn JR, **McKay MP,** et al. The National Report Card on the State of Emergency Medicine. Ann Emerg Med 2008: 53(1):4-148.

20. **McKay MP**, Vaca FE, Field C, Rhodes K. Public Health in the ED: Overcoming Barriers to Implementation and Dissemination. Ann Emerg Med. 2009 (in press)

Refereed Proceedings of Meetings

1. **McKay MP**, Fitzharris M, Fildes B. Driver Injury Patterns in the United States and Australia: Does Beltwearing or Air Bag Deployment Make a Difference? 43rd Annual Proceedings of the Association for the Advancement of Automotive Medicine; 1999 Sep 20-21, Barcelona, Spain. Barrington (IL): Association for the Advancement of Automotive Medicine;1999.

2. **McKay MP,** Coben JH, Larkin GL. Driving Beliefs And Behaviors Of Novice Teen Drivers And Their Parents: Implications For Teen Driver Crash Risk. Annual Proceedings of the Association for the Advancement of Automotive Medicine. 2003 Sept 22-24, Lisbon, Portugal. Barrington (IL): Association for the Advancement of Automotive Medicine;2003.

3. **McKay MP.** Statewide Annual Hospital Charges For Acute Care Of Traffic Injuries: Nebraska, 2004 Annual Proceedings of the Association for the Advancement of Automotive Medicine. 2007. October 12-17, Melbourne, Australia. Barrington (IL): Association for the Advancement of Automotive Medicine;2007.

C. Book Chapters

1. **McKay MP.** Bradyarrhythmias. In: Rosen P, Hayden SR, Wolfe R, Schaider JJ, editors. The Five-Minute Emergency Medicine Consult, First Edition. Philadelphia: Lippincott, Williams & Wilkins; 1999:146-147.

2. **McKay MP**, Farrell SE, Ennis K, Binstadt ES. The Acute Care Experience in the Emergency Department. In: Silverstein NM, Maslow K, editors. Improving Hospital Care for Persons with Dementia. New York: Springer; 2005:75-98

3. **McKay MP.** Bradyarrhythmias. In: Rosen P, Hayden SR, Wolfe R, Schaider JJ, editors. The Five-Minute Emergency Medicine Consult, First Edition. Philadelphia: Lippincott, Williams & Wilkins; 2003.

4. **McKay MP.** Facial Trauma. In: Marx J, Hockberger, Walls R. editors. Rosen's Emergency Medicine, Concepts and Clinical Practice, Sixth Edition. New York: *C.V.* Mosby; 2006. Chapter 39.

5. **McKay MP.** Pathophysiology of Injury. Battle C, editor. Essentials Of Public Health Biology: A guide for the study of Pathyphysiology. Sudbury, MA. Jones and Bartlett; 2009. Chapter 14, pp 199-212

6. **McKay MP** and Curtis LA. The Emergency Physician in Injury Prevention. In Brian Rowe, editor. Evidence Based Emergency Medicine. West Sussex, UK. Blackwell Publishing Ltd, 2009 pp 589-599

E. Abstracts

1. Friedman DI, Larkin GL, **McKay MP**, Forjuoh SN, Coben JH. Like Father, Like Son? Concordance of Reported Bike Helmet Use Among Parents and Their School Age Children (abstract). Acad Emerg Med 2000;7:486.

2. Larkin GL, Friedman DI, **McKay MP**, Forjuoh SN, Coben JH. Predictors of Self-Reported Child Bicycle Helmet Use: A Derivation/validation Random School Survey (abstract). Acad Emerg Med 2000;7:486.

3. Friedman D, Forjuoh SN, Larkin GL, **McKay MP**, Coben JH. The Early Impact of a Community Coalition on Children's Bicycle Helmet Use (abstract). Acad Emerg Med 2000;7:427-b.

4. Friedman DI, Larkin GL, **McKay MP**, Forjuoh SN, Coben JH. Like Father, Like Son? Concordance of Reported Bike Helmet Use Among Parents and Their School Age Children. Abstracts of the Annual Meeting of the American Public Health Association, Boston, MA. November 2000

5. Larkin GL, Friedman DI, **McKay MP**, Forjuoh SN, Coben JH. Predictors of Self-Reported Child Bicycle Helmet Use: A Derivation/validation Random School Survey. Abstracts of the Annual Meeting of the American Public Health Association, Boston, MA. November 2000.

6. Friedman D, Forjuoh SN, Larkin GL, **McKay MP**, Coben, JH. The Early Impact of a Community Coalition on Children's Bicycle Helmet Use. *Abstracts of the* Annual Meeting of the American Public Health Association, Boston, MA. November 2000.

7. Friedman D, **McKay MP**, Coben JH, Larkin GL, Rodriguez A. Increasing Helmet Use in Children: Successes, Setbacks and Scooters. Annual Meeting of the American Association for the Surgery of Trauma, Seattle, WA. September 2001.

8. **McKay MP**, D'Antonio J, Friedman D, Coben JH. Teenagers Change Their Behavior Following Implementation of New Graduated Driver Licensing System. Annual Meeting for the Society of Academic Emergency Medicine. Acad Emerg Med 2002 9:467-a-468-a.

9. Friedman D, Coben JH, D'Antonio JA, **McKay MP**. The Impact of International Terrorism on Community-level Violence. Annual Meeting for the Society of Academic Emergency Medicine. Acad Emerg Med 2002 9:503-a

10. D'Antonio JA, Friedman D, Coben JH, **McKay MP.** Correlates of Gang Involved Homicide in Pittsburgh, PA. Annual Meeting for the Society of Academic Emergency Medicine. Acad Emerg Med 2002 9:472

11. Chng YM, Pallin DJ, **McKay MP**, Camargo JP. Epidemiology of Epistaxis. Research Forum of the American College of Emergency Physicians. October, 2004.

12. Silverstein NM. The Hospital Experience for Persons with Dementia: Four Perspectives. **McKay MP,** Farrell SJ, Ennis KA, Binstadt ES. The Acute Care Experience in the Emergency Department. Gerontological Society Meeting, November 2004.

13. **McKay MP.** Non-fatal Motorcycle Injuries: Helmets save Hospital Days and Hospital Charges. Society for Academic Emergency Medicine, May 2005

14. Roberts D, **McKay MP.** Trends in Elderly ED Visits 1993-2003: What Does the Future Hold? American College of Emergency Physicians, Research Forum, October, 2006

15. Contractor DN, Kapur GR, **McKay MP** "ROAD TRAFFIC INJURY PATTERNS AND IMPACT IN URBAN INDIA: THE VADODARA EXPERIENCE" Fourth Mediterranean Emergency Medicine Congress (MEMC IV) Sorrento, Italy, 15-19 September 2007.

16. Limpert J, **McKay MP.** Annual, Statewide Hospital Charges for the Acute Care of Fall Related Injury. Annual Meeting, American Public Health Association. Washington DC, November, 2007

17. Baker J, **McKay MP.** Five Years of Emergency Medical Services in Shenandoah National Park. Annual Meeting of the American Public Health Association, San Diego, CA, October 2008

18. Shaffer A, **McKay MP.** Alcohol and Violence Among DC Public High School Students . Biannual meeting of the Society for the Advancement of Violence and Injury Research. Atlanta, GA, 2009

19. Shaffer A, **McKay MP.** Alcohol and Violence Among DC Public High School Students . Research Day, The George Washington University, Washington, DC 2009

20. Hill J, Kamanga-Sollo G, **McKay MP**, Petinaux B, Shaffer A, Salazar L. Do Patients Know Who Does What in the Emergency Department and Does it Matter to Them? Research Day, The George Washington University, Washington, DC 2009

21. Grewal M, **McKay MP**, Shaffer A. Gang Membership in the Emergency Department.: What You Believe May Not Be True. Research Day, The George Washington University, Washington, DC 2009

22. White MP, **McKay MP**, Shaffer A. Older Drivers: Attitudes and Beliefs. Annual Meeting of the Association for Automotive Medicine, Baltimore, MD. 2009

F. Invited Publications
Commentaries and Editorials

1. **McKay MP.** Commentary: Emergency Physicians and Emerging Technologies: Special Crash Investigations.(*NHTSA Notes*). Ann Emerg Med. 2003;41(4):758-579

3. **McKay, MP**, Vaca, FG. Commentary: Pedestrian Roadway Fatalities: Profiling the Problem. (NHTSA Notes) Ann Emerg Med. 2003;42(4):480-482

4. **McKay MP**. Commentary: "You Drink, You Drive, You Lose;" Reaching the Target Audience is Not Enough .NHTSA Notes, Ann Emerg Med. 2004;44(2):155-6.

5. **McKay MP**, Vaca FG. Commentary: Supersized Vans: A Supersized Problem. NHTSA Notes. Acad Emerg Med. 2004;44(6):657-659.

6. **McKay MP.** Can the Car Tell Us Who Needs The Trauma Team? Editorial. Ann Emerg Med 2005;45:51-2

7. **McKay MP.** Novice Teen Drivers and Crashes – Just How Worried Should We Be And What Should We Do About it? NHTSA Notes. Ann Emerg Med 2005;45(6): 639-642.

8. **McKay MP**, Garrison HG. Reducing Drunk Driving: What is the Role of the Emergency Physician? NHTSA Notes. Ann Emerg Med, NHTSA-Notes. 2006:46(6): 553-5.

9. **McKay, MP.** Seat Belt Use – *Nearly* an Epidemic of Safety. NHTSA Notes. Ann Emerg Med, 2006: 47(4):370-1

10. **McKay MP.** NHTSA Notes: What happens to crash victims after we resuscitate them? Ann Emerg Med. 2007;49(6):818-20.

11. **McKay, MP**. Emergency medical services: just the beginning of an effective system. NHTSA Notes. Ann Emerg Med. 2008;52(4):454-6

12. **McKay, MP**. Pedestrians: Truly Vulnerable Road Users. NHTSA Notes. Ann Emerg Med. 2009; 53(6):825-826.

G. Letters

1. **McKay MP**. Letter to the Editor: Special Crash Investigations. Ann Emerg Med. 2003;42(4):599-600.

2. Cooper Z, **McKay MP**. Letter to the Editor: Diabetic Mastopathy. Am J Emerg Med. Am J Emerg Med. 2004;22(6):498.

3. **McKay MP.** Letter to the Editor: Traffic Safety in the United States. Am J Public Health. 2004;94(2):170-1.

I. Other Publications

Clinical Communications

1. **McKay MP.** Physics of Sport Utility Vehicles. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2003;7(1):3-9.

2. **McKay MP.** Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2003; December

3. **McKay MP.** Updating the CDC Research Agenda. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2003; December.

4. **McKay MP.** Trauma and Injury Prevention Section: Who We Are and What We Do. Section News, Young Physicians Section. American College of Emergency Physicians. 2004;in press

5. **McKay MP.** Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2004; April.

6. **McKay MP.** Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2004; July.

7. **McKay MP.** Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2004; September.

8. **McKay MP.** Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; January.

9. **McKay MP.** Letter from the Chair. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; April.

10. **McKay MP.** Letter from the Chair: The CDC's Acute Care Injury Research Agenda. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; July.

11. **McKay MP.** Letter from the Chair: Not the Last Gasp. Section News, Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; September

12. **McKay MP.** The World's First Automobile Fatality. Trauma and Injury Prevention Section, American College of Emergency Physicians. 2005; September

Thesis

McKay MP. Pennsylvania's Strengthened Graduated Driver Licensing System: Reactions of Parents And Teens And Implications For Crash Risk. Pittsburgh (PA): University of Pittsburgh; 8/10/2002.

Presentations

Regional

2000	Occupant Safety: Whose Job Is It Anyway? Emergency Medical Services of Western Pennsylvania
2001	Biomechanics of Human Injury Guthrie One Helicopter Service, Robert Packer Hospital
2000–2001	Occupant Safety and Falls in the Elderly Trauma and Injury Prevention Seminar (TIPS) for EMS Professionals Municipal and Regional EMS provider groups throughout Pennsylvania
2005	The Demented Patient in the Emergency Department: Information Critical Caregiving at Its Best: Positive Interventions in Alzheimer Care Alzheimer's Association: National Capital Area Chapter
2005	Alcohol Intervention and Injury Prevention "Alcohol Screening, Intervention, and Confidentiality Requirements in Trauma Centers and Emergency Departments" Innovators Combating Substance Abuse
2006	The Demented Patient in the Emergency Department: Information Critical Southern Maryland Dementia Care Conference

National

2001	Moderator: "Professionalism"

Society for Academic Emergency Medicine

2003 "Epistaxis"
Scientific Assembly, American College of Emergency Physicians

2004 "Public Health Advocacy: The Researcher in Action"
Annual Meeting, Society for Academic Emergency Medicine

2004 "CODES for the End-User"
Annual meeting, Crash Outcomes Data Evaluation System (CODES)

2005 The Demented Patient in the Emergency Department
Alzheimer's Association Annual Meeting

2006 Minimal Risk Research and the IRB
Society for Academic Emergency Medicine Annual Meeting

2006 Neurological Trauma
Evidence Based Review of Emergency Medicine

2007 The care of the demented patient in the Emergency Department
Alzheimer's 2007: Strategic Directions in Research and Care

2008 Ambulance Transport Safety Summit
Transportation Research Board
George Washington University Site Director

International

1998 Pediatric Trauma Care
Children's Hospital, Corrientes, Argentina

2006 Injury Control for the Emergency Physician
International College of Emergency Physicians,
Halifax, Nova Scotia, Canada

Service to Community (all unpaid)

Regional

1999-2002	Medical Command Physician	Lifeflight Aeromedical Transport Service, Allegheny General Hospital
1999-2002	Member	Pittsburgh Helmet Coalition
1999-2000	Chair, Funding Committee	Pittsburgh Helmet Coalition
2000-2002	Director of Development	Pittsburgh Helmet Coalition

1999-2002	Medical Advisor, Health Course	Sto Rox Middle School, McKeesport, PA
2002-2004	Member	SAFE Coalition, Massachusetts
2005	Legislative Testimony	Maryland House of Delegates, Against repeal of motorcycle helmet law
2006	Legislative Testimony	Maryland House of Delegates, Against repeal of motorcycle helmet law
2006	Legislative Testimony	District of Columbia City Council For repeal of alcohol exclusion clause
2007	Legislative Testimony	Maryland House of Delegates, Against repeal of motorcycle helmet law
2009	Board of Directors	Washington Regional Alcohol Program (WRAP)
National		
2006 -	Advisory Board	Campaign for Public Health

Exhibit B

THE GEORGE WASHINGTON UNIVERSITY MEDICAL CENTER
WASHINGTON DC

DEPARTMENT OF EMERGENCY MEDICINE

October 29, 2009

Introduction

I am a licensed physician with 19 years of practice including four years of specialty training in Emergency Medicine, four years of service in the US Navy as a General Medical Officer caring for active duty men and women as well as their families (providing both pediatric and adult care) and 11 years of practice in Emergency Medicine. I have practiced this specialty in six states in the US and in three hospitals in Victoria, Australia. In addition, I am an expert in injury control – from prevention through caring for injuries to understanding the long term consequences of injuries. My CV is attached as further documentation of my experience.

Scope of work

I was retained by the Arizona Federal Public Defender, Habeas Unit to review the abdominal injuries to Rachel Gray in the Barry Jones capital case. In particular, I was asked to comment on the nature of her injuries, their potential etiology as well as the timeline from injury to symptoms and to death in this case. I thoroughly reviewed the autopsy and hospital photographs, available medical records and autopsy report.

I then performed an intensive review of the medical and surgical literature to better understand the usual presentation and time course of the fatal injury, a retroperitoneal rupture of the duodenum. In the 21st century, this injury is readily identified by computed tomography (CT scan); a test routinely performed on both pediatric and adult trauma victims. When identified, it is treated with emergent surgery – which is typically life-saving. Therefore, my review of the literature spanned many decades to include cases that occurred before the identification of the injury was so straightforward. I focused on cases involving children, particularly pre-schoolers, as that was the age of the victim in this case and because young children may describe symptoms differently than older children or adults. My review included only those papers written in English, but did include case reports and case series from countries outside the United States.

Overall, I reviewed more than 50 articles in the medical literature and was able to identify reports of more than 200 cases of intestinal injury in children, including at least 160 cases of duodenal perforation with the timeline described from injury through diagnosis to treatment and outcome. These articles were written at different times for a variety of reasons. Some discussed the best method for diagnosing the injury. Others debated the best surgical means of repair. Still others simply covered the epidemiology and outcomes for treated cases. A few reviewed the state of the knowledge on the topic at a given point in time. For the purposes of this report, I did not include cases involving adults (over 15), or those that involved only hematoma without frank laceration (not potentially fatal except from dehydration and vomiting), or those that involved lacerations to the large intestine.

2150 PENNSYLVANIA AVENUE, NW • SUITE 2B-417 • WASHINGTON, DC 20037 • (202) 741-2911 • FAX (202) 741-2921
www.gwemed.edu

Findings

1. Abominal injury

Rachel Gray's fatal injury was a perforation of the third portion of the duodenum as it passes through the retroperitoneum. There are a few critical things to understand about this injury. In the gastrointestinal tract, the stomach empties into the duodenum, which is shaped like a "C". The top of the "C" is the first part and lies within the abdominal cavity. As it descends, a the duodenum moves posteriorly and the vertical portion of the "C" overlays and is stuck to the vertebral bodies. This are is not free floating in the abdomen like the rest of the intestines. In fact, this sections are separated from the abdominal cavity (the "peritoneum") by a layer of tissue and are described as being "retroperitoneal". Thus, injuries to these sections of the duodenum initially cause air and intestinal contents to leak into the space around the kidney rather than into the abdomen and the initial symptoms are therefore somewhat isolated. This is the area where Rachel's laceration occurred.

There are two potential causes of injury to this area of the duodenum. The most likely is that gas became trapped in the hollow tube and a hard blow caused the wall to "pop" in the manner of a balloon. Contusion to other areas of the abdomen may occur but the "softness" of other tissues and their ability to slide away can be protective. An alternative theory is that a sudden blow pulls (shears) the vertical section away from the bottom of the "C" where it is stuck against the bone. Either way, the result is a ragged opening in the duodenum just to the right side of the spinal column.

Common accidental causes of this particular injury in children are moderate to high speed motor vehicle crashes (where this injury is seen among both occupants and pedestrians) or as the result of a sudden blow to the abdomen from a bicycle handlebar, a large or heavy object suddenly striking the upper abdomen, the steering wheel of a go-kart during a crash, or even from a heavy child kneeing or stepping on the area during play. It is not caused by direct blow to the back or flanks of the body.

Among the described non-accidental cases of pediatric duodenal laceration, it was notably rare to find significant bruising of the abdomen overlying the injury (particularly in cases where this was the only abdominal injury). These children tended to present late to physicians and often the story failed to disclose any trauma. In fact, the true injury was identified several times only when exploratory surgery was performed on children with peritonitis – without external signs of trauma or the correct historical information, the surgeons suspected an alternative, non-traumatic cause of peritonitis on the way to the operating room.

In Rachel's case, the report of injury to the right side of the transverse colon (hematoma or bruising in the wall) suggests that the major force of the injurious blow was focused on the right side of her abdomen. This could have been someone stomping on the area from above (if Rachel were lying on the ground, or a blow with a blunt object. If the latter, the blow could have come from the left or the right depending on the relative positions of the attacker and Rachel and the angle of strike used.

If repaired early enough, retroperitoneal laceration to the duodenum is not fatal. The area can either be simply closed with stitches or a more complex repair can be performed. There is no question in my mind that neglect of the child's medical condition significantly contributed to her death. In fact, all but three deaths described in the medical literature were due to associated injuries (primarily brain injuries). In these three cases, the children (also victims of non-accidental trauma) arrived moribund to the treating physicians and could not be

saved. In all three cases, the injury had occurred more than 48 hours before presentation.

If the diagnosis is not made or treated immediately, a series of biologic processes occur. Acidic fluid from the stomach enters the duodenum along with pancreatic juices and bile and any food that the child eats. Some of this leaks out the laceration into the retroperitoneal space, causing an inflammatory reaction. However, this fluid is very nearly sterile; stomach acid and food digesting enzymes kill most organisms. Thus, the focus of the initial response is inflammation rather than infection. Inflammation is part of the body's natural process of healing any injury. In this case, the body cannot seal up the laceration completely and the process continues.

In terms of symptoms, there undoubtedly is pain when the injury occurs. However, there may not be significant pain immediately after that. As time goes on, there may be discomfort in the epigastrium (upper stomach) or in the flank but it is likely not very severe early on.

Adjacent tissues become inflamed as time progresses; this is likely the cause of the areas of hemorrhage, necrosis, and inflammation in the right adrenal gland. The pancreas lies like a line across the middle of the "C" with the head portion right at the middle of the vertical section. There was some hemorrhage around the head – which likely occurred during the injury itself, and inflammation that occurred as a result. There may have been some initial contusion during the injury but much of the findings were likely due to the progression of inflammation. In addition, there was some evidence of contusion to the colon and mesentery overlying this area. As time continued, the inflammation spread to include the intra-peritoneal area with frank peritonitis evident at autopsy. While there may have been some bacterial contamination of the inflamed tissue over time, the key event here was the inflammation itself.

As the inflammation continues into peritonitis, the pain begins to increase until the child complains bitterly and begins to vomit. Children with frank peritonitis have exquisitely painful bellies and complain even if the bed gets jiggled or when going over bumps on the road in a car. Breathing rate increases in an effort not to move the abdomen and also to compensate for systemic acidosis. As the inflammatory process further progresses and becomes systemic the body stops being able to respond; it begins to shut down. The child becomes lethargic and then somnolent and finally breathing slows and the heart stops.

The progression from injury to death in this case required a significant amount of time. The body had to respond to the laceration, sending inflammatory cells to the area and that inflammation had to progress to out of control. Again, because the duodenal contents are essential sterile, there were not initially any particularly virulent organisms that would have released toxins or otherwise caused shock directly.

The exact timing of the progression of inflammation is not clear. However, there are several documented cases where the diagnosis was delayed as long as 4-7 days after the injury and, after appropriate treatment, the child survived. I was unable to find a single reported case of death from an isolated duodenal laceration where death resulted in less than 48 hours.

In addition, there was nothing in Rachel's medical history to suggest some reason for her to be particularly susceptible to early death from this injury. Although large at birth, she was a relatively small child in both height and weight but gained weight appropriately until the last year of her life. In that year of her life she grew 4 inches but only gained one pound. She was never taken to the pediatrician for refusing food and per the investigator, the family had significant social issues. This suggests there was a component of underfeeding – it is likely that

she was often hungry. However, nothing in the autopsy findings or photos suggests she was severely malnourished. Similarly, while she had a few typical childhood illnesses, she did not have a history of any ongoing disease nor routinely use any medication. Thus, to the best of our information, there was no underlying nutritional deficit, medication effect, or chronic illness that would have diminished the ability of her body to cope with this injury as well as other children her age; nothing to suggest her body's response to this injury would be faster or more catastrophic than her peers.

The physiology of the body is not significantly different between a preschool child like Rachel and an older child of eight or ten. However, the preschooler's ability to interpret and convey their degree of illness, particularly about abdominal pain, is significantly different. Preschoolers lack the experience and vocabulary to explain to parents or caregivers that this particular stomachache is not the same as a simple "stomach virus". The most obvious example comes from an associated disease, appendicitis. Here, the initial symptom is vague mid-abdominal pain which begins as the appendix, residing in the right lower quadrant of the abdomen, becomes inflamed and starts to swell. The child may complain and turn down food but the problem is rarely diagnosed at this stage. Internal organs lack the nerves human skin uses to identify the exact location of the problem; they only register stretch. As the inflammation and infection progress, the appendix becomes increasingly swollen and nearby structures become involved and also inflamed. This is localized peritonitis – and now the patient develops increasingly severe pain localized over the right lower quadrant. Patients are often vomiting at this stage. Untreated, the appendix continues to swell. If not removed, the appendix will perforate like a pimple popping, spreading inflammation and infection throughout the abdominal cavity and causing generalized peritonitis. At this point, the presence of a "real" problem becomes obvious to most parents. While appendicitis itself is more common among older children, among those with appendicitis, the rate of rupture for preschoolers is nearly three times the rate for 10 year olds.

It is not surprising that no adult noticed Rachel's degree of illness until the evening before her death; it may not have been that obvious. In the era before CT scanning, children thought to be at high risk were admitted to the hospital and underwent serial abdominal exams by the treating trauma surgeons. This means the surgeons saw the child and physically examined their abdomen several times a day. Even so, surgery for many of these injuries was delayed for days or the injury was incidentally discovered when other symptoms (such as low blood pressure from blood loss) led to surgery for solid organ injury. Finally, given what I presume was chronic hunger, it does not surprise me that she is reported as eating earlier in the day before she died.

2. Bilateral hemotympanum. This is blood behind the eardrums without perforation of the eardrums. Causes due to trauma are limited to either fracture through the base of the skull (the temporal bone) causing bleeding into the middle ear behind the drum (not present in this case, per the autopsy findings) or to barotrauma to the drum itself. The latter can be seen when a cupped hand is used to strike the outer ear. Pressurized air is thrust rapidly against the eardrum and bleeding in and behind the drum can occur.

3. Extensive subgaleal hematoma. In addition to an "untidy" laceration of the scalp most likely cause by a fall or being struck with a blunt object, Rachel is described as having extensive subgaleal hematoma – involving nearly all the scalp. The scalp consists of a layer of hair bearing skin, a thin layer of fat, a thick layer of tendon called the galea which connects the muscles of the forehead and the muscles of the back of the scalp, and then the periosteum directly covering the bone of the skull. The type of subgaleal hematoma described by the

pathologist in the autopsy report is quite extensive and suggests one of several things: 1) a large hematoma or blood collection that occurred from a head strike in one spot that then layered out over a large area over several hours or days ("a goose-egg that went down"); or 2) repeated blunt battering of the scalp. One case of emphatic hair pulling over the entire scalp during braiding has been described but does not fit with the physical evidence in this case.

Opinions

1. Rachel Gray's duodenal injury occurred no sooner than 36 hours prior to death and likely occurred much earlier. There is absolutely zero evidence to suggest it could have occurred in less than 24 hours.

2. The absence of noticeable bruising on Rachel's abdomen before her death is in keeping with other described cases of inflicted injury causing duodenal perforation.

3. The description of Rachel as willing to eat and not looking severely ill the day or two before her death is consistent with other described cases, particularly given chronic hunger.

4. The associated head injuries were likely the result of blunt trauma.

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